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PREHISTORY OF ANATOLIA AND ITS RELATIONS WITH THE BALKANS

In view of the vast amount of material now available for the study of prehistoric Anatolia and the Balkans and the necessary limits imposed on the size of each paper, the author has concentrated in this paper on the chronological aspects of one very important period, the transition from Late Chalcolithic to Early Bronze Age in Anatolia, Bulgaria, Romania and Greece. A review of the evidence is necessitated by a revised chronology for Western Anatolia, the result of new excavations.

The present paper therefore deals with it under the following headings
A. West Anatolian chronology revised.
B. Western Anatolia and the Aegean.
C. Western Anatolia and the Balkans.
D. The Bulgarian Early Bronze Age and the North Aegean Coast.
E. Cernavoda culture ahd Anatolia.
E. Absolute chronology.

To this is added a chronological chart and an accompanying note explaining the author's views on the neolithic-chalcolithic relationships between Anatolia and the Balkans.

A. WEST ANATOLIAN CHRONOLOGY REVISED

Until a few years ago, the site of Hisarlik, better known as „Troy", was the only well stratified sequence available in Western Anatolia which could serve as a basis for relative, though not absolute chronology, at least of the Bronze Age. The beginning of Troy I was taken as the beginning of the Early Bronze Age (E. B. I.), that of Troy II as the beginning of E. B. 2. and Troy III—V were grouped together as E. B. 3. Troy VI and VII covered the Middle and Late Bronze Ages with an arbitrary and illogical dividing line between Middle and Late Troy VI, c. 1450 B.C. Earlier material from Kumtepe and Beşiktepe in the Troad was not incorporated in the well-established chronological scheme of Blegen and his collaborators, who put the

beginning of Troy I in the region of c. 3100—3000 B.C. long before the invention of C 14 dating.

Although Blegen's estimate of 500 years for Troy I and his early date were generally disregarded in favour of a date c. 2750 B.C. for the beginning of the Aegean E.B.A., it would now seem that he was right. Digging at Tarsus, H. Goldman dated the beginning of Tarsus E.B. 1 at the same period on the basis of connections with Syro-Palestinian and Mesopotamian sequences (Palestinian E. B. 1 c. 3200, Mesopotamian Jemdet Nasr or Proto-literate C and D, starting c. 3100 B.C.) Most scholars accept that the beginning of Egypt's Dynasty I should be put at c. 3100 B.C.

The renewal of the Italian excavations at Poliochni under L. Bernabo Brea and the British excavations of the key site of Beycesultan in South-west Anatolia as well as an inspection of the unpublished Kumtepe material in the Istanbul Museum gradually threw doubts on the assumption that Troy I marked the beginning of the West Anatolian E.B.A. The Kumtepe I b material was obviously ancestral to that of early Troy I (= Kumtepe I c) and it was soon found to have a wide distribution in N.W. Anatolia extending also over the area of the Yortan culture and into the Lydian plain between Akhisar and Manisa.[1] Here then was a pre-Troy I stage of unknown length, probably ancestral to both the Troy I and Yortan cultures. Sherds of this type turned up also at Bayrakli (Old Smyrna), were recognised among the earliest Thermi material, and formed thick deposits at Emporio (VI and VII with 6 building levels) in the island of Chios. Bowls with similar rolled rims now turn out to be typical of the Grotta-Pelos culture (Caskey's E.C. 1) of the Cyclades, they occur at Athens, and among the heavy grey ware of E.H. 1 Eutresis in Boeotia. Kumtepe I b fruitstands figure prominently in Poliochni Green period on the island of Lemnos, but Kumtepe I B bowls with S-shaped rims also occur in two earlier phases, Poliochni Blue and Poliochni Black. It may be wrong to connect the Kumtepe I B *phase* material which is so widespread solely with the presumably fairly shortlived occupation of Kumtepe I b itself (where material of this sort may have arrived only at the very end of the period) or with early Poliochni Green only, equally shortlived. Kumtepe I B types would seem to span Poliochni Black, Blue and early Green, and the use of the term „Kumtepe I b phase (wares) material" used in its wider sense, is probably no longer accurate enough. It was, of course, coined before the Poliochni pre-Troy sequence was known and the Poliochni periodization seems preferable where enough material is available for such archaeological finesse. We seem to be here in the presence of a phenomenon that recurs throughout Anatolian archaeology; the longevity of certain ceramic forms, first recognized in a certain and restricted phase, which when one's knowledge extends appears to be much less restricted in time (Kumtepe I b bowl forms; Troy I lugs, *depata*, beak spouted vessels, techniques of white paint, pattern burnish, etc.). Ceramic development in Anatolia at least, appears to have been much slower than was once believed and the case appears to be the same in Crete, the Aegean and the Balkans. The publication of Poliochni and Beycesultan marks a turning point in the assesment of West Anatolian chronology. It now appears

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[1] D. H. French. „Late Chalcolithic pottery in NW. Anatolia and the Aegean", *Anatolian Studies* XI, 1961, 99 ff.

that Troy shows only a part of the long sequence; Poliochni goes back considerably further, adding at least another phase to the Early Bronze Age and Beycesultan carries one even further back into a hitherto nebulous Late Chalcolithic period together with Emporio and Saliagos. Twelve years after writing „Anatolian chronology of the Early and Middle Bronze Ages" (*AS* 7, 1957 pp 55 ff.) serious modifications can no longer be avoided. The new evidence affects three main areas: Western Anatolia, the Aegean and the Balkans. My article „Anatolia and the Balkans", in *Antiquity*, XXXIV, 1960, p. 270—278 I must admit is seriously out of date, and erred in many facts, as many critics have pointed out. It did, however, have the desired result of stimulating chronological discussion and in drawing attention to the fact that archaeologists can not work in isolation.

Western Anatolia

The main divisions of the Beycesultan sequence of S.W. Anatolia from Level XL to VI a, divided into Late Chalcolithic 1—4, and Early Bronze Age 1—3 b remains unchallenged stratigraphically. What is in need of revision is its correlation with Poliochni and Troy and the question of absolute chronology. There are no reliable C-14 dates for any of these sites, but their stratigraphy should provide a reliable skeleton for Western Anatolia as a whole barring questions of local variations, overlaps, retardation etc. which one can hardly hope to discuss on the basis of our present knowledge of the evidence.

The main problem is the correlation of Beycesultan E.B. 2 with its N.W. Anatolian character and Troy. Before the Poliochni publication I proposed in Beycesultan I to equate it with Troy II, taking into account its developed N.W. Anatolian look with many red wares, elaborate and „degenerate" trumpet lugs and luxurious grooved and ribbed decoration which was more distinct and distinguished than that of Troy I itself or Thermi I—V. Comparing it with the fine pottery from the Elmali plain, prior to the new excavations at Karataş-Semayük, which still had plenty of white painted pottery and simpler lugs, closer to those of Troy I, one was prepared to concede that the Elmali pottery represented an earlier (Troy I) phase, contemporary with, but not related to Beycesultan E.B. 1, whereas the Beycesultan E.B. 2 pottery was somewhat later, i. e. of Troy II date. The assumption then was that this rather luxurious pottery represented a local S.W. development of ultimate N.W. Anatolian Troy I, where a similar development had been interrupted by the arrival of wheelmade pottery and new shapes during Troy II. In the circumstances such a development seemed the most logical explanation and the ten building levels of Beycesultan E.B. 2 might be likened to a similar number in Troy II. Both would have ended c. 2300 B.C. and the new E.B. 3 a. elements of Beycesultan XII could be linked to Troy III, with occasional late Troy II features appearing at inland Beycesultan in Level XIII a, the last one of the E.B. 2 period. A belief in the Troy I lug development and its application to most of Western Anatolia did much to strengthen this view and the Elmali pottery seemed to confirm it. The excavations at Karataş—Semayük have rudely shattered this illusion. Both houses and graves of M. Mellink's E. B. II early and late period, including the simple Troy I lugs and the white-painted bowls and jugs are associated with other

types immediately recognizable as Beycesultan E.B. 2, though the excavator makes only reluctant parallels with this neighbour culture, relying instead upon distant Troy and Tarsus. The implications are obvious: here we have two neighbouring cultures of the same general date (S.W. Anatolian E.B. 2) a southern one with simpler features and a northern one with more elaborate decoration on its ceramic forms. The Troy I lug development is therefore not applicable to the Southwest of Anatolia and both cultures could be contemporary with Troy I and Troy II. The inclusion of Troy II in the S.W. Anatolian E.B. 2 period is suggested by what follows after the destruction of Beycesultan and Karataş-Semayük (the latter dated by C-14 to c. 2362 B.C.+62), in the form of identical E.B. III *a* pottery at both sites (Beycesultan XII—X), etc. Early Karataş E.B. II could equate with Troy I, and late E.B. II with Troy II (and not with Troy I, as M. Mellink wrongly states). The C-14 dating of end of late E.B. 2 Karataş V equates with that of Beycesultan XIII a, Troy II b, etc. and gives us an anchoring point for the end of the E.B. 2 period throughout Western and Southern Anatolia, which I had hitherto estimated at c. 2300 B.C. This is a precious gain and one hopes it will be followed by further C-14 dates for the beginning of the period.

Sandwiched between the E.B. 1 of Bağbaşi and Beycesultan XIX—XVII and Karataş and Beycesultan E.B. 3 a, the S.W. Anatolian E.B. 2 cultures can now be equated with Troy I—II, which may be grouped together in a N.W. Anatolian E.B. 2 (and not 1) period. The inland Yortan culture of N.W. Anatolia falls in the same period (Troy I+II) with possible extensions into an earlier E.B. 1 and a poorer after-flourish into E.B. III a. Lack of stratification and the absence of scientific observations rob this culture of any chronological value. It can only be fitted in by comparisons with its neighbours, the Troy and Beycesultan cultures.

The great advantage of the Poliochni excavations is the addition of one carlier phase of E. B. A. culture, represented by Poliochni Blue (II) and early Green (III), ancestral to Troy I, and best called E. B. 1. The urban character of these periods serves as a link with what follows and the dividing line—however faint—between Late Chalcolithic and E.B. 1 should probably be drawn between Poliochni II (Blue) and I (Black), a pre-urban series of settlements without any metal. L. Bernabo Brea has equated Poliochni Black (I) with its early fruitstands, beakspouted jugs and prevailing whitepainted decoration with Beycesultan Late Chalcolithic 4, in which the first „Kumtepe I b“ elements appear as they do here. As the culture evidently arrived on the island from the Anatolian coast, probably the area south of the Troad, parallels with the Beycesultan area are legitimate, for the western neighbour of this area is the Lydian plain, where D. H. French has located pottery closely similar to Beycesultan L. Chalcolithic 2, 3 and 4 („Kumtepe I b“) at a number of sites. It is not such long-range contact then as it might appear on first sight. Allowing for local peculiarities, the equation of Poliochni Black (1) with Beycesultan L. Ch. 4 may be accepted, the more so as D. Levi's excavations at Iasos in Caria show that both Beycesultan L. Chalcolithic (4?) and the following E. B. 1 types reached the Aegean coast. This is confirmed by the Tigani pottery on Samos, unfortunately found unstratified. Here again are whitepainted jugs of Beycesultan L. Ch. (4?) type, early beakspouted jugs like those of Poliochri Black (I) as well as other types,

less closely related, showing that Samos had a culture of its own before the arrival of „Troy I" shapes in Heraion I (closer to Beycesultan E. B. 2) and Lower Meander valley sites (ribbed stands of pedestal bowls, etc.)

Poliochni Blue (II), although obviously derived from Poliochni Black (I) becomes urban and was heavily walled. In this E. B. I town metal appears and the pottery shows grooved and ribbed decoration imitating metal vessels as does its eastern equivalent Beycesultan E. B. I. Other similarities are less obvious than in the preceding period and links are not particularly close, but sandwiched in between Poliochni Black and Green, the first of which could be equated with Beycesultan L. Ch. 4, and the second with E. B. 2, Poliochni Blue (II) developed out of its predecessor, but Beycesultan E. B. 2 is unlikely to have developed out of E. B. 1. Nevertheless the new Poliochni sequence confirms the results reached about the date of Beycesultan E. B. 2's beginning on the new Karataş evidence. Both lines of enquiry lead to the same result: Beycesultan XVI equals early (?) Troy I, unless fhere is a slight overlap, which cannot be demonstrated on present evidence.

Adding an earlier phase to the West Anatolian Early Bronze Age preceding the „Troy I horizon", while fully justified on archaeological grounds, will inevitably emphsize the chronological divergence between W. Anatolian and „Aegean" Early Bronze Ages. At the moment there is no evidence to suggest any priority for the beginning of E. M. 1 over E. H. 1 or E. Thessalian 1 with the case of the Cyclades being somewhat different as the Grotta-Pelos culture evidently goes back into the period of the „Kumtepe I b wares", or Anatolian E. B. I, if not before. „Urbanity" in any sense is not really attested until E. M. II, or E. H. II when the Aegean experiences first „culture intensification" as the result of metallurgy and trade. In Western Anatolia this had started long before, but again reached its climax during the Troy II (i. e. E. B. 2 b) period, with which E. M. 2, the Keros-Syros culture and E. Thessalian 2 should probably be equated, at least in their earlier phases. This brings one to our next problem: the correlation of the new West Anatolian chronology with that of the opposite shores and islands of the Aegean.

B. W. ANATOLIA AND THE AEGEAN

It is generally agreed among Aegean archaeologists that the typical red slipped wares of Early Helladic I, could have their origin in Western Anatolia. At Eutresis in Boeotia there are grey wares with Kumtepe I b lugs below the rim, ornamental lugs reminiscent of the beginning of E. B. 2 at Beycesultan and vertically ribbed jars that provide links with Beycesultan E. B. 1. For what they are worth these features would point to the transition between E. B. 1 and 2 in W. Anatolia, in other words immediately before Troy I or early Troy I. On our previous chronological scheme as set forth in *AS* 7, 1957, p. 55 ff. *Beycesultan I*, and „The Chalcolithic and Early Bronze Ages in the Near East and Anatolia", p. 141 (map IX) E. H. I would equate with the beginning of Troy II. The date must now be raised to the beginning of Troy I, i. e. that of E. B. 2 in W. Anatolia, a date long favoured by Aegean scholars, even if they reached that conclusion by other ways. On the basis of the Kumtepe I b-like sherds of Eutresis one could argue that E. H. I started just a little before Troy I; on the other hand they may show that

such shapes had not everywhere gone out of use at the beginning of E. B. 2, as e. g. in Thermi I. Such arguments are feeble and inconclusive. Nor can we be absolutely sure that periods ended at the same time everywhere. Let us take some famous examples: the division between the end of Troy I and the beginning of Troy II is based on architectural evidence. Troy II a I marks the beginning of a new architectural lay out, which was to persist throughout Troy II. Its pottery on the other hand is undistinguishable from that of the last Troy I levels. Both the last Troy I and Troy II a levels are destroyed by fire. How could anyone on another site without the benefit of architecture equate anything on the basis of pottery alone with either final Troy I or Troy II a? This cannot be done. For this reason alone the final date of Thermi V cannot be established. Usually Thermi V is treated as the end of Troy I, but W. Lamb has contended that it could be the beginning of Troy II before the pottery started changing in Troy II b. In the same way Poliochni Red (IV) overlaps with late Troy I and early Troy II, and the new wares only come in Poliochni Yellow (V). In terms of absolute chronology these variations probably do not amount to more than a century, but one is surprised to find archaeologists making firm equations with the end of Troy I and the beginning of Troy II. Such distinctions are not warranted in the circumstances.

This brings us to the old controversy about E. H. 2 imports; a sauceboat fragment in Thermi V, which after what has been said could date from the beginning of Troy II as well as from the end of Troy I. Then there are small sherds of painted Keros-Syros ware at Poliochni said to have been found in Poliochni Blue (II) and Green (III), i. e. ranging from E. B. 1-Middle Troy I. Similar material is said to have been found first in Middle Troy I, but D. H. French has thrown justified doubts on their stratification. The „scored ware" need no longer enter into this controversy as it is widespread along the West Anatolian coast and very much at home in the Konya Plain and Cilicia. The present sutuation is not whether Blegen and Caskey, *et. al.* knew their E. H. wares or whether D. H. French or myself knew our Anatolian wares, but to what extent these sherds (and they are only sherds) come from closed finds without the possibility of a stratigraphic mixup. Anybody who has conducted excavations knows that even with the best will on earth, he cannot see *every* sherd come out of the ground; sherds fall out of sections, either through the forces of gravity, wind, rain, soft animal holes, etc. If such a sherd falls behind the workman's back among others, he may well take it to have been *in situ* how could he know? Unless then sherds come from a sealed deposit in a burnt building e. g. or are large enough not to have been able to fall through animal holes, wall crevices or other disturbances, the utmost care should be taken in their use as a chronological evidence. Pits and foundation trenches are notoriously dangerous, for what is dug up is put back again and more recent material can be thrown back into deep holes. Postholes are another possible source of confusion. One is not arguing a case, but it should be noted that unlike the Thermi sauceboat fragment, the Poliochni sherds are small and the Trojan imports in Troy I not reliably stratified according to D. H. French. (*AS*, XI. 1961, p. 118—120).

There is a further inconsistency: E. H. II sherd from middle Troy I, Poliochni Green (III) and Poliochni Blue (II) and Thermi V, whatever cumu-

lative effect they may have on the observer, cannot all be in correct stratigraphical position. Even if one were to agree with Blegen and Caskey that E. H. II imports start in Middle Troy I and Poliochni Green (III) and continue, as e. g. in Thermi V, the same pottery can hardly also occur in Poliochni Blue (II) which is considerably earlier and on the Eutresis evidence predated E. H. I. The argument is similar to that of D. H. French *red* the E. H. II (or E. C. II) sherds at Troy. (*AS* XI, 1961). Unless one is prepared to equate E. H. I with Early Troy I, and start E. H. II with Middle Troy I and thus obtain a very short first phase of the Aegean E. B. A. followed by a very long second phase (up to 2300?) these parallels built on the evidence of imports at Poliochni and Troy I seem rather flimsy. The equation of E. H. 2, Keros-Syros and E. M. 2 with the Troy II period seems more credible. One handled, funnel necked cups of the Keros-Syros culture occur in Poliochni Red (IV), which equate with Late Troy I and early II and the sauceboat fragment from Thermi V could be dated to early Troy II. By itself this evidence is not conclusive. Similar shapes turn up in later deposits in S. W. Anatolia, in E. B. III a Karataş and in Beycesultan XIII (and XII), transitional E. B. 2/3 a. It would be easy to conclude from these dated examples that the Keros-Syros culture and Poliochni Red (IV) should be redated to the period around c. 2300 B. C. and thus come to the conclusion that Poliochni Yellow (V) (i. e. Troy II) begins in Troy III? This is one of the dangers of dating by long-range comparisons.

Without further points of reference it would then appear that the first phase of the Aegean Bronze Age may be equated with E. B. 2 a (Troy I period), the second roughly with E. B 2.b (Troy II period) and in Crete and the Cyclades with the entire E. B. 3 period as well, ending c. 1900 B. C. E. H. III may run parallel with E. H. 3 from 2300 onward or perhaps a little later as Caskey suggests. It is not yet clear whether the beginning of E. H. III corresponds to Troy III or IV. Its end is fixed by MM I A imports in MH. Lerna V. The Early Thessalian III period can not yet be closely dated, but may run parallel to the mainland sequence.

The Grotta-Pelos culture, as we have already seen goes back into the Greek Late Neolithic, perhaps as far as W. Anatolian E. B. 1, if not before. It runs partly parallel with the pattern burnished wares of the Attic-Kephale culture (Keos, Aigina, etc.) and the Argolid which prec e eded E. H. I. The presence of „Dimini coal scuttles“ in this culture may show that it started rather early, but its beginning is probably post-Saliagos. In Anatolian terms it may have started as early as Poliochni Black (I) or Beycesultan L. Chalcolithic 4 and it may run parallel to the pattern burnished culture of Tigani on Samos, and the Iasos cemetery. Cylindrical marble vessels link the Grotta-Pelos culture on the one hand to the Attic-Kephala culture, on the other to Tigani and Iasos, clear evidence of maritime connections.

The discovery of the Saliagos culture[1] near Antiparos by C. Renfrew and John Evans introduces an even earlier phase of development in the Cyclades. The Saliagos culture with its fruitstands and white painted pottery has clear links to Middle Neolithic Greece, especially Central Greece. It is

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[1] J. D. Evans and C. Renfrew, Excavations at Saliagos, London, 1968.

evidently earlier than Poliochni Black (I) and Beycesultan L. Ch. 4. and its bowl and jar shapes are closer to those of Beycesultan L. Ch. 2 and 3 without there being evidence for close connections. This culture is well dated by C-14 to the period between c. 4500—3900 B.C. which provides one with another anchor for absolute dating.

On the Greek side it must be later than the Sesklo culture and on the Anatolian side it is probably later than Beycesultan L. Ch. 1. This leaves us about 400—500 years for L. Ch. 1, which is in any case later than the end of Hacilar I, put around 5000—4900 by C. 14.

Emporio VIII and IX seem to be related to Saliagos. The origins of both are still unknown and the same must be said of that of Beycesultan L. Ch. 1. Neither Emporio IX nor Beycesultan L. Ch. 1 are derived from the „Early Chalcolithic" of Hacilar I or Emporio X and the earlier material of Ayio Gala, which seems to include a sherd of Hacilar I *painted* ware, but is otherwise monochrome and closer to Hacilar VI—V, or the likewise monochrome wares of the Lydian sites. The genesis of the Late Chalcolithic cultures of Western Anatolia, or their contemporaries in the islands remains a stimulating task for future research.

C. WESTERN ANATOLIA AND THE BALKANS

Although Turkey in Europe, or Turkish Thrace as it is more often called nowadays borders both on Bulgaria and on Greek Thrace, the fertile area is so ill-explored, for military reasons, that hardly anything is known about the archaeology of this region. This is all the more regrettable as it is exactly here that three roads emerge from Anatolia: the one following the Aegean coast and thus leading to Thrace, Macedonia and Thessaly, either by land or sea, and another leading through the Maritsa gap straight into the heart of Bulgaria, the fertile Thracian plain, and connecting through the Sofia area with northern Serbia. Thirdly a route ran up the Tunja valley from Edirne to eastern Bulgaria and from there to the Danube valley in Romania, which could also be reached by a coast road or by sea.

In all three areas, which for all our ignorance about Turkish Thrace, may still be considered close neighbours, some sort or other form of Anatolian influence is to be discerned at one time or other between the Neolitic and the end of the Early Bronze Age. The nature of this contact is often controversial, often vague and undefined, rarely definite, but not more so than in the Aegean. Probably the main obstacle to extensive correlation is the scarcity of material that is both well stratified and well published. Of some of the most important new excavations in Bulgaria, Karanovo, Tell Azmak and Ezero only short preliminary notices or articles are yet available. In Greek Thrace, the important material from Paradimi (in the Salonica museum) is virtually unpublished; Dikilitash is still being excavated, Stivos, Galepsos and Akropotamos only known from inadequate publications. Vršnik, Zelenikovo, Bubanj Hum, to mention but a few sites in Jugoslavia, suffer from the same complaint. Along the Black Sea coast, only the Hamangia culture is well known, but the Varna culture is still nebulous.[1] Everywhere there are, however signs of a renewed interest and more extensive excava-

[1] See now H. Vassová, Keramika typo Varna v Severovychodnom Bulharsku.

tions using modern techniques and the recent series of C-14 dates from East Bulgarian sites is of great importance, not only for dating its sequence, but also for Northwest Anatolia, if valid correlations can be established. Let us see what can be done with the evidence now available, and turn to Eastern Bulgaria where a long new sequence can be established as the result of recent excavations at Karanovo, Tell Azmak and Ezero. The Bulgarian sequence runs parallel to that of Western Anatolia from Karanovo I that can be linked to late Hacilar to Karanovo VII, the Bulgarian Early Bronze Age which comes to an end sometime in the late third millenium. The stratigraphic column at Karanovo, a large and high mound shows some thirty superimposed building levels and if we add extra ones from other sites (Ezero has more Karanovo VII building levels, through fewer Karanovo VI ones) the total has already risen to 40 in E. Bulgaria, which is remarkable for an European site and rarely seen outside the Near East.

It implies a greater measure of stability of settlement than is normally associated with European conditions (including Greece) and reminds one of the proximity of Anatolia. It is all the more remarkable as local building materials were wood, (oak) wattle and daub, not mud-brick as in Anatolia Oak structures may well have been longer enduring than mudbrick ones!

Period			no. of building—levels		
			Karanovo	Azmak	Ezero
Karanovo VII	Bulgarian E.B.A. or Ezero culture		4	—	9 (or 12 ?)
gap					
Karanovo VI	Gumelniţa		16 4	8	8
Karanovo V	Maritsa	AENEOLITHIC	4		
Karanovo IV	transitional		2		1
Karanovo III	Veselinovo	NEOLITHIC	3	—	2+x
Karanovo II	canellated ware		2	—	
Karanovo I	„Starčevo“		3	5	

D. THE BULGARIAN E. B. A. AND THE NORTH AEGEAN COAST

It is important to note that E. B. A. layers follow Gumelniţa (Karanovo VI) layers (after a gap or interruption in the record, the length of which is not yet established at Karanovo, but at Ezero Georgiev does not mention a gap between the Karanovo VI and VII periods). In this gap at Karanovo Mikov would originally put the Mikhalits culture.[1]

In any case the E. B. A. layers are definitely post Gumelniţa in East Bulgaria whether there is a general hiatus or not. Gumelniţa (B?) sherds were found in the Larisa culture of Thessaly. Rakhmani is followed by Early Thessalian I, reasonably equated with E. H. I, with E. Thessalian II containing typical E. H. II Urfirins ware. The Thessalian EBA is also later than the Gumelniţa culture. In Macedonia the Macedonian EBA at Kritsana follows, with overlap in Kritsana I and 2 (graphite painted bowls) upon an ill-defined Late Neolithic of Larisa characteristics (white-painted, graphite

[1] But the Mikhalits material is now well linked to Middle Ezero levels by the new excavations.

painted, pattern burnished, knobbed, ribbed etc.). Further east at Dikilitaş, Photolivos etc. similar EBA material overlies a local facies of Sălçuta/Gumelniţa type (graphite painted, incised, etc).

It may therefore be said that the establishment of EBA cultures in the Southern Balkans and N. Aegean are not only later than the whole Vinča culture and its late relatives (Larisa, Rakhmani, Mac. LN. and Bubanj Hum I a) but also postdate Sălçuta IV.

These stratigraphic observations refute Milojčić's dates for the Vinča culture and they also demolish my argument that Troy I and II could be correlated with the Gumelniţa culture,[1] on the basis of a series of bowl shapes. With this falls the case for a low chronology, for if Gumelniţa preceded Troy I, as is now obvious, Vinča is also pre-Troy I and one cannot have an E. Cycladic II vessel imported into a culture that does no longer exist. Whatever the date of the Tartaria tablets may turn out to be, and whether they are evidence for literacy or not, one cannot compare material from Transylvania with that from South Iraq without having eyebrows raised about the archaeological validity of such a chronological procedure. In view of the notorious uncertainties about the boundary of Late or Subneolithic and E. M. I, the argument for dating the beginning of E. M. I by an imported Egyptian stone bowl to a period after the start of the 3rd dynasty, i. e. after 2750 B. C. does not inspire confidence.

Milojčić's arguments for a late beginning (Troy III?) of various E. B. A. cultures in the Balkans can thus no longer be upheld with the evidence now available.

The absence of early Troy I trumpet lugs among the Kritsana material may have given rise to the theory that the beginning of the Macedonian EBA could only be dated to later Troy I, if not Troy II, assuming that such features may have continued later in the provinces far away from the centre of the culture. Since then, perfectly good *Early* Troy I, lugged bowls have been found, e. g. at Photolivos by D. H. French as well as indications of „Kumtepe I b" material of Anatolian pre-Troy I origin, spread over the North Aegean coast from Macedonia to Thrace *AS XI, 1961*. On this evidence alone the „Macedonian E. B. A." may have started before the beginning of Troy I, i. e. still during the new E. B. 1 period of Western Anatolia, perhaps in connection with the rise of urban Poliochni Blue (II).

Seen in this light, E. Neustupny's statlling correlation[2] of Poliochni II b (late Blue) with phase C/D of the Baden culture with its metallic looking pottery and Amazon axes, is no longer surprising. Corded ware (A) with drooping battle axes succeeds Baden Amazon ages, just as happens in Poliochni Green and Red (and Troy I—II) which follow Poliochni Blue.

Corded ware sherds are a feature of Early Thessalian I, including a footed bowl with triangles arranged in rows on its interior, a pointed one handled cup and bowls with loop handles rising high above the rim. Cord impressed sherds also figure at Servia, the cup has a parallel at Kritsana, the bowl with triangles is an well known shape in the Bulgarian EBA, where it occurs at Yunacite, Mikhalits, Karanovo and Ezero together with other cord impressed ware. Cord impressed ware also occurs at Paradimi, at Kanali

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[1] Antiquity, 1960.

[2] Slovenska Archaeologia, XVI—I, 1968, p. 25—26. Most scholars prefer a link with Poliochni Green, which still has the same shapes. This equation maybe preferable.

Köprü, Alpullu and at Karaağaçtepe (Protesilaos) in Thrace, at the last site probably in Troy I context. In W. Anatolia incised decoration takes the place of cord impressed ware; no corded ware is known.

The general horizon that seems to issue from these correlations may be tabulated as follows.

E. Th. I[1] Scrvia[1] Kritsana	Corded ware Baden C/D/E	Yunacite Bulg.	Troy I early — Pol. Gr III
Kumtepe I b			Poliochni II b. late blue
			Poliochni II a early blue

[1] Corded ware

After these preliminaries we must return to the Bulgarian E. B. A. (Karanovo VII).

Mikov divided Karanovo VII in an earlier phase with Mikhalits pottery and Yunacite type askoi and a later phase of Sveti Kiryllovo type, presumably the basis for VII a and VII b. There seem to be 4 building levels.

In another report, however, it is suggested that the Mikhalits group falls in the gap between Karanovo VI (Gumelniţa) and Karanovo VII. Georgiev (*Antiquity* 1966, 33 ff.) states that

a) The EBA levels take up the whole of the third millenium,

b) there is cross dating with Troy I—II and Thermi IV—V („C" wares)

c) the lower levels of the EBA synchronize with Troy I.

After Neustupný „the middle levels of Ezero are contemporary with Troy I+II and Mikhalits and corded pottery. Also many affinities of the middle levels of Ezero and consequently Troy I (exist) with the Baden Pottery". (*Slov. arch.* 1968, p. 25).

After Milojčić there are 12 EBA building levels at Ezero divided as follows: quoting Georgiev (no reference), equating with the Macedonian EBA (late Troy I—V).

EBA Ezero
XII— VI early = late Troy I and II
VI—IV middle = Mikhalits (Troy III+IV
IV—I late = Karanovo VII b) „ „

Before the excavation of Karanovo and Ezero, my own view of the Mikhalits and Baadere material — said to be identical — was Troy I, and Troy II (on the basis of the depata) which cannot be *earlier* than Troy II c. (*Antiquity* 1960, 275)

Until Georgiev publishes the Ezero pottery *level by level* it is very difficult to form an opinion of the correlations of the Bulgarian EBA, the more so as the *old equation with „Troy I" is no longer precise enough now that we have the Poliochni sequence, which extends the sequence into pre-Troy I times (into West Anatolian E. B. I.).* Brea's mistaken identification of Poliochni Blue (II) with E. H. I. could easily complicate the comparative chronology.

What has been published of Mikhalits, Baadere, Karanovo VII and Ezero (as well as the scattered material from other sites such as Yunacite, Razkopanica, Sveti-Kyrillovo, Veselinovo (mixed with Karanovo III) agrees with Georgiev's judgement that much of this culture is of local origin, mixed with two other influences: a strong Anatolian one and another that derives from the steppe, such as the practice of decorating pottery with pellets, dimples or cord impression. The various views on chronological correlations expressed above cannot all be right, and it is usually easier to define the beginnings of a culture when borrowings or influences are still pronounced than their end when local divergencies have run their course, unless there are, of course, datable imports, like the depata of Baadere.

In the Karanovo VII culture graphite paint, bone and clay figurines have disappeared, but askoi, inverted rim bowls and one- or two-handled jugs survive.

The EBA pottery is greyish black or brown and black polished and handmade. This would suggest that the wheelmade ware, plain buff or red-coated that make their debut in Troy II b and take over from the grey black ware in middle and later Troy II and Poliochni Yellow (V) did not influence the Bulgarian EBA, or for that matter the Macedonian EBA, except as N. W. Anatolian imports like the Baadere and Stivos depata. The greater part of W. Anatolia also did not adopt wheelmade pottery until the beginning of E. B. 3 a, c. 2350 or 2300 B. C. Such evidence is not conclusive, but *one would like to know whether the Bulgarian EBA shows real Troy II, III, IV or even V influences or not*[1]. One would like to know the association of the Baadere depata; are they definitely contemporary with Mikhalits pottery or a later intrusion? Is there similar evidence of red wheelmade ware either at Ezero or Karanovo?[2] Are the Veselinovo teapots (spouted bowls) a local reflection of Troy II metal vessels or do they imitate EB 3 a teapots? The cog-wheel handles of jugs reoccur in the EB 2 b (period Troy II) culture of Ahlatlibel in the Ankara region on jugs and in a similarly dated Demirci H. culture on bowls. Both have as yet no earlier local antecedents, such as one might have expected in the Sangarius basin or its western extension the Marmora group of the Yenişehir ware. Beak spouted jugs with knob under the rim (Ezero, *Antiquity* 1966, fig. 1) remind one of EB 2 b vessels in the Nallihan-Beypazari region, though the parallels are not close. Perforated lugs below rims of beakspouted jugs are also a feature of Konya Plain E. B. II, an even more remote parallel. One does not feel that such parallels are of much help in fixing the date of the Bulgarian EBA, and one must look to geographically closer areas, south and southwest of the Sea of Marmara; the Marmara-Troy I, the Yortan and the Troy I culture, and of course possibly, generally ill-defined earlier stages, except the well established Poliochni Blue (II).

Ezero, Baadere and Mikhalits are all surrounded by stone fortification walls, which at this period are evidently considered a necessity. In this respect they resemble Poliochni Blue (II), Green (III), Red (IV), Troy I and II, Thermi V, etc. In NW Anatolia this habit begins in E. B. 1, to become general in

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[1] During our visits to the Bulgarian Museums I failed to see any such Troy II—V influences. The links are with Troy I, Poliochni Green, Kumtepe 1b-Thermi.

[2] V. Mikov informed me that they were not associated with anything else hence stratigraphically useless.

E. B. 2. The reason for these walls is to protect the new wealth of its inhabitants, based on metallurgy and hence trade in raw materials. Walls protect the new treasuries. Hoards of metal are in fact a feature of the new EBA society; Poliochni and Troy have yielded spectacular hoards, whereas Thermi, Edremit and Ezero have produced more modest ones. With tin-bronze established for the Troy I period (Troy and Thermi) it would be fascinating to know the composition of Ezero and Poliochni Blue (II) bronzes. It is suggested that a *tin trade* with Bohemia was responsible for the N. W. Anatolian penetration of the Balkans and the Troy I lugged bowls of the Bohemian Rivnač culture are certainly suggestive! An earlier phase of this Anatolian penetration may be seen in the Baden culture's possible links with E. B. 1 Poliochni Blue (II) and the spread of contemporary „Kumtepe I b" elements throughout the Aegean. Fortification of Bulgarian EBA settlements fits into the same general picture, the exact date remains to be determined. The battle axes of Karanovo VII are said to be of the Troy I type but still accompanied by the earlier Amazon axe. Clay models are also made together with „anchors", which have parallels in E. H. I. The use of „anchors" is by no means clear; could they be clay copies of copper Amazon axes.

The metal finds from Ezero fit into a general E. B. 1—2 picture and further precisions in dating cannot yet by demonstrated. Most of our chronological evidence must therefore be derived from ceramic parallels, positive and negative.

Negative points

a) Fruitstands of Poliochni I, II, III or IV types or datable pedestal bowls of Troy I type have not yet been found (or illustrated) in the Karanovo VII culture.

b) The use of white paint, still characteristic of Early Troy I and contemporary levels at Thermi and Yortan, has not been reported in the Karanovo VII culture.

c) Typical later Troy II features (with the exception of imported depata) such as wheelmade plain or red coated ware, face urns, face pots-plates, beermugs etc. do not seem to have reached Bulgaria.

d) No indisputable EB 3 a or b types, datable in Anatolia, have been illustrated for the Bulgarian EBA to prove its extension beyond c. 2350/2300 B. C.

e) No material that can be linked to Troy V or Troy VI, such as „Grey Minyan" has been reported or illustrated from Bulgaria, whereas the latter occurs on the shores of Turkish Thrace.

On the basis of published material the Bulgarian EBA has parallels with the N. W. Anatolian E. B. 2 period (i. e. Troy I and Troy II), but not with E. B. 3.

If, on Anatolian evidence, one lets the Bulgarian EBA run to the end of EB 2, or second and the Baadere depata demand this if not a Troy III date, then one must also assume that the new wheelmade Troy II—Poliochni V wares were not adopted in the north, where local techniques continued to the end of the period, as e. g. also in the Yortan and S. W. Anatolian areas.

I would regard the following features of Karanovo VII pottery as evidence for Anatolian contact and influence, probably in the form of metal vessels.

a) Beakspouted jugs; i. e. jugs with obliquely rising rims.

b) Bowls with inverted rims; with or without „Troy I lugs", horizontaly perforated.

c) Conical bowls on rings base or flat base with thickened rim, incised or in Bulgaria cord impressed.

d) Vertical rim bowls with lugs or ledge handles.

e) Bowls with ledges on rim. Kumtepe I b type.

f) One or two handled amphora.

g) Cups with handle rising above the rim.

h) Askos with obliquely rising spout.

These vessels are all rather specific, but others are less easily defined. Storage jars with rope band decoration near the rim occur at Beşiktepe, at Poliochni II (Blue) and perhaps later. Holemouth jars and similar cups with one handle or baking platters are found in both areas, without any necessary contact.

One might also notice what is absent in the Karanovo VII culture, yet characteristic of N. W. Anatolia: the fruitstands and pedestal vases, the numerous lids of all sorts, the pyxides of lids, the jug with cutaway spout, the duck vase, red plates, multiple vessels, etc.

On the other hand in the Karanovo VII culture one finds cogwheel handles, thumbgrip handles, horned handles, exaggerated versions of *ansa cornuta*, some of which may hark back to Karanovo III times, whereas others have parallels in Poliochni II (Blue) in pre-Troy I levels. The lugged and spouted bowl from Karanovo VII is wholly Anatolian in style, yet lacks parallels. The Veselinovo spouted vessels are simpler and likewise unparalleled. The local askos may replace the Anatolian duck vase. The Strašimirovo jug on four feet and the bowl and the cogwheel handle are unmistakably Anatolian, yet lack exact counterparts.

Cord decoration and the vessels from Ezero (*Antiquity* 1966, fig. 1, bottom row) look unfamiliar except the second from the left. Knobbed decoration is almost unknown in West Anatolia, and so of course is corded decoration. These may well be elements from the North Pontic steppe.

From these few comments it will be obvious that it is no longer possible to pick a number of potshapes out of a culture and thus date it. What is needed is comparisons between ceramic complexes, illustrated by building level. Until this is done one can only suggest on Anatolian evidence that the Bulgarian EBA essentially occupies the EB 2 period, *but it may already have started at the end of EB 1* (during Poliochni Blue (II) and in its last phase may have continued till the end of the EBA, c. 2000—1900. B.C. The absidal houses of Karanovo VII, the rows of rectangular dwellings at Ezero show the same two types as are found in early Troy I.

One impatiently awaits further information about this interesting culture with its horses, corded ware and steppe elements extending perhaps up to the Aegean and Marmara shores, potential candidates for the Proto-Anatolian Indo-Europeans that spread into Anatolia certainly by the end of E. B. 2, c. 2350/2300 B.C. if not before. As possible ancestors of Hittites, Luwians and Pala-people the bearers of this culture deserve much attention.

E. THE CERNAVODA CULTURE AND ANATOLIA

Discovered by D. Berciu in 1956, the Cernavoda culture of the Dobrogea and the adjacent Lower Danube basin westward is linked by him to both the Donja Slatina culture in Serbia and to the Ezero culture of Bulgaria. *How close these parallels are is not yet clear*, even if Berciu talks about the Cernavoda-Ezero culture and shows them as a unit on his map in *Romania*, 1967, fig. 26.

Many of the sites are on high ground, occasionally fortified with stockades and ditches, but others are open settlements on river terraces or they occupy old mounds. The idea of fortification may well have come from the stone walled settlements of the Aegean, Troad and the Ezero culture. As in Bulgaria there are various strains: old local ones, southern ones and at a somewhat later date steppe influences, Berciu states that pottery, metal tools, the way of life and their anthropological type point to the Aegeo-Anatolian character of the culture. Yet the dead buried in contracted position were sprinkled with red ochre like the North Pontic ochre grave culture (with different racial types) that were to intrude into the Cernavoda culture. Among the pastoral elements of the Cernavoda culture we may quote this habit of red ochre sprinkling, the prevalence of stock breeding, the zoomorphic sceptre-heads, the fine grey ware with twisted cord impressions, notched cordons, incised and impressed designs. Domestic horses and cord impressed ware are said to occur from the first phase of the culture.

Among the Anatolian elements is a Veselinovo axe from Crivatu[1] near Bucharest that has parallels at Veselinovo in Bulgaria and at Poliochni Red (IV) i. e. late Troy-I-early II and at Dorak (Troy II). Other bronze weapons include a flat axe with flanges and a triangular dagger (phase III) with a broad midrib and four rivets, possibly local forms developed from Anatolian prototypes. Baked clay anthropomorphic figurines from Cernavoda (Romania, fig. 27), both male and female, show a striking resemblance to the figurines from the Yortan cemetery of Babaköy (*Ist. Mitt.* 1966) in N. W. Anatolia and the graffite from Troy II, which can hardly be explained without assuming Anatolian contact. In spite of C-14 dates D. Berciu dates this EBA culture to c. 2200—1600 B.C., which is contradicted by the Anatolian parallels which point on the contrary to the E. B. 2 period, before 2300 B.C., i. e. to approximately the same date as the Ezero culture. When both cultures ended is far more difficult to decide, and they may well have developed into later Bronze Age cultures of the late third and second millenium.

F. ABSOLUTE CHRONOLOGY

Whereas the establishment of a relative chronology between Anatolia and the Balkans, at least in its main lines presents few difficulties, dating it in terms B.C. has led to many passionate controversies.

King lists and the historical chronology of Egypt and Mesopotamia can take us back to a period of c. 3000 B.C. but not beyond. The establishment of the date of earlier periods is pure guess-work if C-14 is found

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[1] (not in Cernavoda culture !)

unacceptable, as it still is to numerous scholars. Where a check is possible between historical dates and C-14 dates, as in the 3rd and 2nd millenium B.C., the latter are almost invariably lower than the former, and admittedly inacceptable. The end of Troy I cannot have occured c. 2160 B.C., nor can the Royal Tombs at Ur be dated to c. 2000 B.C. not even on the exaggerated historical low chronology. The Early Helladic dates from Greece and the Late Chalcolithic dates from Anatolia, determined by the C-14 method are too low; so are dates for Egypt and Mesopotamia.

The clue to this problem has now been studied by physicists, and H. Quitta, V. Bucha and E. Neustupný have recently drawn attention to it. The main point is the influence of the geomagnetic field of the earth which affects carbon production differentlý at various periods, which accounts for the chronological discrepancies and which can be corrected. Apparently C-14 dates (with the lower half life as published in *Radiocarbon*) should not be compared with dates arrived at by the historical method unless they are corrected for the geomagnetic field intensity.

The unacceptable uncorrected date of 4110 B.C. (2160 B.C.) for the end of Troy I layers at Emporio (Chios) yields with correction of +650 for geomagnetic field intensity and —100 for the age of material a corrected date of 2710 B.C., which corresponds to a date of c. 2700 B.C. which can be reached also by the historical method. Thus we can get a date for the end of our E. B. 2 a period (Troy I).

Similarly the E. H. I date of Eutresis, 4445 B.C. (2495 B.C.) when corrected with c. 610—100 yields a corrected date of c. 3005 B.C. which is acceptable and in accordance with an estimated date of c. 3100 B.C. for the beginning of E. H. I, and the beginning of E. B. 2 (Troy I) whereas the uncorrected date is evidently too low. The date for Hacilar 6965 B.C. or 5015 B.C. with lower half life gives 5247 B.C. for the higher half life or a corrected date of c. 5315 B.C. corresponding to the corrected dates for the beginning of Karanovo I a c. 5350 B.C. (*Slovenska arch.* XVI—I, 1968, 49 ff.)

On the corrected radio-carbon dating then the beginning of Hacilar I roughly equals the beginning of Early Neolithic Karanovo I a (=the beginning of the Starčevo-Criş culture of the Balkans), agreeing with the normal relative chronology.

With these fixed points: the beginning of Starčevo-Karanovo I a c. 5350, the beginning of E. H. I=Troy I, etc. c. 3100 and, the end of Troy I c. 2700 and end of Troy II c. 2350/2300, it is possible to anchor most of the important synchronisms between Western Anatolia and the Balkans, at least approximately. One could add others: in Sălcuţa II c there is a C-14 date of 5450 B. C. or 3500 B.C. which corrected becomes c. 4120 B.C. This layer contains Kumtepe I b type bowls and a beakspouted jug of N.W. Anatolian type and as nobody has yet suggested that beakspouted jugs are a Balkan invention, the influence must come from N. W. Anatolia. At Poliochni I they are already found (c. 3900—3500 B.C., historical chronology), but the ancestry of Poliochni I on the Anatolian mainland is still unknown. One cannot prove that beakspouted jugs already occured there c. 4200 B.C. at the time of the beginning of the Sălcuţa culture in the Balkans, yet their fully developed form in Poliochni I would demand it, if it reached the Balkans from N. W. Anatolia, c. L. Ch. 3.

It must be admitted, though, that even with the correction for geomagnetic field intensity some dates like P-295 and P-297 for L. Chalcolithic Beycesultan Levels 36 and 28; 3010+58 and 2640+62 cannot be made to fit and are still too low (3010+750−100=3660 or 2640+630−100=3270 B. C.), whereas others like P-917—921, average 2236±62 for the end of E. B. 2 at Karataş, would yield a higher haltlife date of 2362±62 B.C. or a corrected date of 2236+650—100 of a 2786 B.C., a discrepancy of c. 400 years! The uncorrected date of c. 2362 (with the higher half life corresponds to the historical date of c. 2300 B.C. for the end of E. B. 2, i. e. end of Troy II), but the corrected date c. 2786 B.C. would correspond to the corrected date of the end of Troy I from Emporio of c. 2700 B.C. Yet, the archaeological material shows affinities not with the end of Troy I, but with that of the end of Troy II! = end of S. W. Anatolian E. B. 2 on Beycesultan parallels. The excavator's opinion, mistaken in my view, does equate the P—917—921 dates with the end of Troy I, which the corrected dates would seem to confirm, but she would associate the end of Troy I with the beginning of E. B. 3 a = Sargonid (Accadian) period of Messopotamia, with the historical date of c. 2370 B.C., which I consider ludicrous. Corrected carbon date and historical date (c. 2786 and c. 2370 B.C.) still leave us with the 400 year discrepancy, whichever way one interprets the evidence.

Although the all-important dates for the Bulgarian E. B. A. (Ezero culture) are not yet finalished, H. Quitta has alrady mentioned that they fall in the middle and second half of the 3rd millenium, for the sake of argument let us say between c. 2650 and 2200 or 2000 B.C. (5568 half life) or c. 2800 and 2340 or 2130 B.C. (5730 half life), hence corrected as c. 3300 and 2750 or 2530 B.C. (or thereabouts). Now on a historical chronological basis the Anatolian-Bulgarian links are in the late E. B. 1 (pre-Troy I) and E. B. 2 (Troy I and II periods), estimated at c. 33/3200 (late E. B. 1) and 3100—2700—2350 B.C. (E. B. 2) periods. Neither the dates with low or high half life would seem to correspond, yet the corrected dates would fit admirably, given the tolerance of 100—200 years. It will be fascinating to see what the Berlin dates for the Ezero site are!

There are still far too few dates from the Near East and the Aegean to assess what importance the correction for C-14 dates for the geomagnetic field intensity might yield — but as we have seen there is a ray of hope — but there can be no question that when applied to European chronology the results are far-reaching. H. Quitta (*Antiquity* XLI, 1967, p. 269) states: „If we were to raise the date of the horizon Michelsberg — Cortaillod—Schussenried — Jordansmühl — younger Baalberge/Salzmünde — Bodrogkeresztur—Cucuteni B — Gumelniţa IV; Bubanj—Hum—Sălcuţa IV, which is fairly well synchronized by archaeological cross-links and consistent C-14 values, to the beginning of the 4th millenium, the final consequence would be that the Aegean and Near Eastern Early Bronze Age would have to begin as early as its middle or first half". The consequences of this proposed chronological revision are by no means incompatible with recent reasearch in the Near East. E. Neustupný has produced arguments to link Classical Baden with pre-Troy I Poliochni II (late); the Sălcuţa II c beak spouted jugs suggest links with N. W. Anatolia at an even earlier date; pre-Troy I influences occur in E. H. I Greece, in the Cyclades on the north coast of the Aegean and in the Ezero culture. With the discovery of an earlier phase of the Anatolian E. B. A.

preceding Troy I, even on the historical chronology this new E. B. I phase must go back to the middle of the 4th millennium!

H. Quitta remarks on the „inconceivably long duration" for the Middle and Late Neolithic (in Europe). The preceding early phase of the Neolithic, moreover, can hardly be shorter! „We should have to accept almost 4000 years as the total length of the epoch, during which the early, middle and late neolithic development characterized in Central Europe by Bandkeramic, Funnel Beakers and Corded ware ran its course." One appreciates H. Quitta's qualms, yet does the Near Eastern development suggest anything different? If we use the same division into Neolithic and EBA, and even if we now start our E. B. I in Anatolia at c. 3500 B.C. our Neolithic would certainly run 4000 years if not more to Aşikli Hüyük, not to mention still undiscovered earlier phases. And what about Syria, Palestine and Mesopotamia with an EBA c. 3200 B.C. and earlier „neolithic" developments reaching back to the Natufian and Zawi Chemi-Shanidar, a minimum of 6000 years of neolithic development according to C-14 dates (uncorrected).

Why, one might ask, should Europe's „neolithic" development have been shorter than that of the N. E. area from which it was derived? Seen from the Near Eastern angle with its very slow but gradual development, a short neolithic development in Europe seems surprising, a long one normal.

E. Neustupný's new chronology for C. Europe, taking into account corrected C-14 values agrees quite well with our own chronology for Western Anatolia.

Note on the chronological chart.

The author's views on chronological correlations are indicated on the accompanying chart. These are of course tentative and subject to discussion. The following points are raised by this chart:

1. The apparent priority of Thessaly and adjacent parts of Macedonia (Nea Nikomedeia) vis a vis Bulgaria, S. Romania and Yugoslav Macedonia. Is this real or merely the result of lack of research? I suspect the latter. Have any pre-Karanovo I sites been located in Bulgaria?

2. To what extent are local elements involved in the earliest neolithic settlements versus new foreign influences or even immigrants?

3. While animal domestication may have been practised independently in Balkan neolithic societies, the case of plant domestication is different. Is there any real evidence that wild wheat or barley ever grew in these parts?

4. To what extent do Balkan scholars now envisage farmer-colonists from Anatolia in the development of the various local neolithic cultures?

5. If they deny the influences emanating from Anatolia, how do they explain the similarity in cult objects, such as statuettes of the „Mother Goddess", effigy vases (anthropomorphic), altars, etc.

6. Assuming that the introduction of agriculture into the Balkans involved the arrival of a number, not necessarily large, of Anatolian farmers mixed with local pre-agricultural (or even herdsmen of sheep and goats) then one may be certain that new „neolithic" religious ideas were also introduced, as well as new agricultural tools, etc.

7. Finds in Thessaly suggest that this happened in the Aceramic period, and it would be interesting to have confirmation from Bulgaria and Romania.

8. Did the descendants of these postulated Anatolian immigrants invent pottery in Greece and the Balkans independently or is this innovation due to sustained contact with their former homeland? I do not feel that this question can yet be answered, but the many technical similarities, though with many local shapes, perhaps based on basketry, wooden or leather vessels of the pre-ceramic period, hardly suggest independent origins.

9. The vigorous individuality of the ceramic products of the earliest Balkan cultures may represent local adaptations of simple Anatolian pottery techniques (dark burnished,

plain monochrome or mottled ware, red polished slip ware, red on cream painted and white on red painted).

10. To these the Balkan peoples added barbotine, incised, impressed and excised ware — unknown in contemporary Western Anatolia (or almost unknown). In patterns they followed local precedents, with often suggested textiles.

11. Dudeşti culture patterns resemble Hacilar ones, and Starčevo „pintaderas" owe much to similar objects from Çatal Hüyük and Hacilar. Here again the links may be in textiles, decorated with these „stampseals".

12. Although present evidence then suggests contact between Anatolia and fhe Balkans in the 6th millenium B.C., if not before, the exact nature of these contacts is still unknown — as N. W. Anatolia, Turkish and Greek Thrace have not yet yielded contemporary remains, due to lack of thorough exploration.

13. Around 5000 B.C. or soon after the expansion of the so-called Late Chalcolithic cultures of Anatolia cut short the development of painted pottery in Western Anatolia and the Hacilar culture comes to an end. A sort of Dark Age descends on Western Anatolia.

In this period which ends with the establishment of the E. B. A. c. 3500 B.C. evidence for sustained contact with Thessaly and the Balkans is poor. Evidently Anatolia had little to offer, and the Balkan cultures developed independently along local lines, and with considerable achievements. Much of this development — seen from the Anatolian angle — suggests the final outcome of technological processes hesitantly expressed in the Starčevo period. Strong interaction of various local cultures stimulated development without Anatolian participation. Where Anatolian influence still appears, as in the Hamangia statuettes, or in the grotesque ha..dles of the Karanovo III culture, these look like developments of late Hacilar features, extinct at home. There are similarities, though not very definite, between L. Chalcolithic white painted wares and the use of white or graphite paint in Thessaly or the Balkans on dark coloured wares. Outside the area of L. Chalcolithic dark wares, polychromy developed, both in the Konya Plain and Cilicia, and in Thessaly (Dimini II—IV) and in the Cucuteni culture.

14. Definite Anatolian influence reappears with the rise of the West Anatolian E. B. A. c. 3500 B.C., especially in its second phase c. 3100 B.C.

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DA BOGNÁR — KUTZIÁN (Budapest)

PREHISTORIC RELATIONS BETWEEN HUNGARY AND THE BALKANS

All aspects of Hungary's prehistoric relations with the Balkans can, naturally, not be discussed in one lecture. This is especially so if we wish to go beyond the simple enumeration of facts and focus our attention on the causes and circumstances of these relations. Since I must, at any rate, drop the idea of covering the entire material, I have chosen subjects I consider of paramount importance for assessing the significance of these relations, though I admit that my choice may not be wholly exempt from subjective value judgements.

Since we have assembled to disouss our view in the form of a colloquium, my choice of subjects has also been governed by the consideration that the participants may help Hungarian research clarify various problems either by their deeper knowledge of the regions associated with the problems or by a methodological or factual contribution of linguistics and historic science.

I concentrate on problems of certain ethnic movements in the Neolithic Age, events of similar character of the Copper Age and early metal trade, of the Bronze Age in Hungary and the Mycenaean culture, contacts of the population of the Scythian Age down to Sparta, and finally on certain problems of contacts between the Celts in Hungary and Hellenistic Greece.

Our knowledge on the Early Neolithic Age has widened considerably during the last two decades. The discovery of pre-pottery Neolithic Period in the Near East and then in the Balkan Peninsula has opened a perspective which deeply influenced the problems of the Late Palaeolithic Period and the Mezolithic Age on the one hand, and those of the Early Neolithic Age on the other hand.

The excavations in Thessaly and Macedonia have opened up such successions of layers as have corroborated the chronological order of the cultures of the Early Neolithic and their phases. With Moldavia and the southwestern region of the Soviet Union large new territories have been added

to this early Neolithic culture complex. Throughout the regions known earlier, the number of finds and knowledge have increased considerably. Botanists and zoologists have joined in the endeavour of prehistoric archaeologists to throw new light on the inventors of agriculture and animal breeding, on the process and circumstances of the spread of food-producing husbandry.

The vast amount of knowledge temporarily favours analytic investigations rather than synthesis but does not question the fact that the peoples of this huge cultural complex were interconnected by close ties, in certain places even by ties of kinship. At the time of the Neolithic Age using pottery the pre-Sesklo, Starčevo, Kremikovci-Karanovo, Körös, Criş cultures were connected by such ties. Their area on our continent comprise the territories extending from Southwest Thessaly to the middle course of the Tisza and from the mid-Danube region to the Basarabian plain.

The Vinča culture does not belong to the thoroughly known cultures of the Hungarian region, and still I propose to discuss it here because it enables us to study one of the most important forms of the relations that linked up the Carpathian Basin with the Baikans.

This culture, already in its early phase (A), made its way into the southern zone of Hungary and reached the line of the Maros river. It superseded the Körös culture that had prevailed until then in the region and assimilated the population of the occupied territory. North of the Maros it did not disturb the life of the natives in such a degree, but its presence in the vicinity could be felt. This is the eastern branch of its penetration into Hungary, whose northern-most limit is marked by the area of Szolnok. It appeared in the southern part of the Danube-Tisza mid-region. The main line of its western branch runs along the Danube, west of which its finds can be followed northward up to Esztergom. All this, naturally, did not take place in the earliest phase but most of it still at the time of the early Vinča culture.

Its strong influence spread over a much broader region than the area actually occupied by it. It permitted the survival of part of the heritage of the previous cultures, imparting thereby a certain local colour to the different regions. All this suggests a type of rule over the occupied territory and over the influenced zone which sets up only a few new settlements for itself among the natives.

In such surroundings appear the first indisputable proofs of writing in the Tordos region, that is to say, in the direct eastern vicinity of the Hungarian region, in the Transylvanian Tărtăria, in the valley of the Maros river.

Since the publication of the clay tablets with pictograms, contrary opinions on the stratigraphic position of the finds have also been voiced. This is not the moment to contribute to the rather barren dispute or to analyse the significance of the excellent find. Instead of this, I should like to make he following brief remark.

The circumstances of discovery and the Tordos group itself, to which the lower layers of the site belong, date the tablets to the time of the early Vinča culture (A or B) and define them as belonging to it. This is best proved by the Tordos group and, within this, by the eponymous site. On other pottery — mostly remains of vessels — several hundred pictograms can

be found in this one site. They occur also in some Yugoslav sites of the Vinča culture.

Since the pictographic character of the signs of the clay tablets, on the basis of the Sumerian protoliterate tablets (Uruk IV a — III b, Jemdet Nasr), can be regarded as settled and since the signs can be interpreted, with the help of the same finds, it is doubtless that we have to do with one of the most valuable finds of the Neolithic Age in Europe.

Nothing sheds a clearer light on the circumstances to be clarified, that is, on the character of the relationship, than the fact that writing was used in the Vinča culture. It was used, because it was needed, also here in the Tordos region. Our assumption is not based on the tablets in the first place — although their texts testify to the same —, but on the pottery undoubtedly manufactured locally. Why did they write the word „barley" on vessels? Hardly in order to know what was kept in it. But it acquires a meaning if we suppose that it was used, for example, to indicate a unit of measure, for collecting taxes, for receiving offerings or in order to store the grain in them. The first two uses do not represent a significant difference, if we thiuk, for example, of the early social-political and religious system of the Sumerians. And it is justified to think of this example on the basis of the tablets. The interpretation of their meaning by J. Harmatta reveals some units of measure of barley and wheat offered to gods.

There is a possibility that an organization, adjusting itself to the Sumerians, or even to peoples of similar organization of nearer regions, appeared in the Northern Balkans and spread its hegemony over more distant regions in a form which I refer to here, for the sake of simplicity, as of a „colony like" character.

This possibility cannot be excluded if we do not want to repeat the error made by international research — including linguistics — nearly one hundred years ago. In the late 19th century the scholars received with total indifference the discovery of Zsófia Torma, the enthusiastic Hungarian archaeologist, who regarded the Tordos pictograms as monuments of Sumerian script.

When examining the relations of the Neolithic cultures of Hungary with the Balkan peninsula we come across many other phenomena that meet the eye. Thus, among other things the decoration used in the mid-Neolithic Szakálhát group in Eastern Hungary. Sherds closely affiliated in decoration and execution with the characteristic pottery of this group — presumably originating also from vessels of similar forms — can be followed through Crna Bara in the Voivodina and the Serbian Vinča down to the area of Larissa in Thessaly. Besides the incised ornamentation, the mode of vessel painting, in addition to the figurines with heads thrown backward and triangular faces and to certain variants of anthropomorph vessels form an important circle of the finds testifying to the close relations not only of the Szakálhát group but also of the population of the Tisza culture with the Balkan peninsula. We should like to remind here of the finds which appear at Vinča as imported from the Tisza culture.

The influence exercised through the Vinča culture enriches not only Eastern but also Western and Northern Hungary. Taking part in the complicated process, besides the Szakálhát group and the Tisza culture, was also the Vinča culture. It shows its influence on the Zseliz group near the

middle course of the Danube. This is I think where we can find the roots of the changes that shaped the course of late Zseliz development towards a modification which characterizes already the horizon of a new phase. This horizon regarding Western Slovakia was recently specified by Slovak prehistorians as pre-Lengyel.

The Lengyel culture, however, cannot be interpreted merely as a result of a development brought about by local antecedents, from local resources. Well known are its close relations to the Lengyel-Bapska group in Northern Yugoslavia, on the one hand, and the component of the latter leading partly to the Vinča culture and partly to other Yugoslavian antecedents on the other hand. This does not mean that the population was exchanged. In fact, the local colouring of the groups of the Lengyel culture is actually an evidence of the survival of the population. The surviving population adopted and transformed the new fashion and customs, and maintained those relations with its neighbours which had already existed in the preceding, middle Neolithic Age. These mutual relations with the Tisza culture existed in the earliest times as testified by the imports, and were maintained with the painted pottery group of the Great Hungarian Plain, also in the late Neolithic phase of the same.

Let us examine some proofs of the lively relations that existed between the Copper Age in Hungary and the Balkans.

The Lasinja culture known from Northern Yugoslavia appears in Transdanubia. It is represented in both of its groups, viz. the fluted ware and the pottery of the stab-and-drag (*Furchenstich*) decoration. In the Hungarian region it was given the name Balaton group. Its connection with the Bodrogkeresztur culture in the Middle Copper Age is proved by several finds.

I refer only to the most conspicuous of the Balkan relations of the Bodrogkeresztur culture.

The so-called depas amphikypellon appears in the Balkans. This vessel, presumably of special designation, manufactured in Asia Minor also from precious metals, exerted a definite influence on the pottery of Bulgaria, Greek Macedonia and Eastern Serbia, as well as on that of the regions adjacent to them. The route of its two-handled tankards leads through the Salcuţa culture to Hungary and through Hungary up to Slovakia and Silesia, within the same cultural horizon over this large area. It is remarkable that a considerable part of the derivatives from Hungary show a close affinity of form with the Macedonian examples.

The Gumelniţa culture and especially the Salcuţa are linked up with the Bodrogkeresztur culture also by several other finds. They act as mediators, among other things, for such characteristic types as the pyxis derivatives and the lid variants linked up with them. It is also probable that the find complexes of late Salcuţa character, appearing in the late phase of the Middle Copper Age—and somewhat later also as an independent group of finds—enriched the Hungarian region with new ethnic elements. Their temporary name is Hunyadi-halom group.

Further investigation is needed to clarify why the most characteristic and most common vessel type, of the Bodrogkeresztur culture, the milk-jug, appears — for the time being sporadically — in European Turkey, in Crete, or as a derivative in Bulgaria.

Proofs of Copper Age trade can be found in the spreading of the cross-edged type of copper axe-adze attributed to the Bodrogkeresztur population. This type and its variants appear in a mush broader area than the culture itself, which in Transylvania and Slovakia had its own copper resources. Transportation was directed not only towards the Balkans, but I restrict my discussion to this aspect.

The 29 examples of the type from Bulgaria show that they are imports from the Carpathian Basin, most probably from Transylvania. Its prototype is not known from Bulgaria. There the copper implement with shaft hole of the preivious horizon is the Vidra type hammer-axe. The axe-adzes towards the east do not pass the Russe — Trnovo — Stara Zagora line, and their southernmost examples originates from the vicinity of Plovdiv. Their concentration in the area of Vidin is remarkable. Here the Plakuder find consisting of 12 axe-adzes should be mentioned. According to the finders the axe-adzes were bound together with a wire. Both their concentration in the area of Vidin and the Plakuder find make it probable that this section of the Lower Danube was the last part of the water way on which the copper axe-adzes very likely from Transylvania — were transported to Bulgaria.

The key to the solution of the problem of origin of the Baden (Pécel) culture has for long time been traced south of the Hungarian region. The publication of the Lasinja culture and then its appearance in Hungary display more clearly the phenomena to be investigated than did the earlier, sporadic finds.

It has been expounded by V. Milojčić most unambiguously how strong the impact of the trends starting out from Anatolia and directed towards the Balkans was on the development and shaping of the culture. He has stressed the role of the Bulgarian region in this process. The statements of Milojčić Childe and the prehistorians having similar views have been supported recently also by finds from Hungary. Urns decorated with face have been found at Center, Northern Hungary, in cremation graves. The southern relations of the urns are doubtless.

The Kostolac group reached the Hungarian region similarly through the Northern Balkans. It shows the strongest influence in Southeastern Hungary and spread upwards along the Danube as far as Slovakia as well. It is a question, however, whether it reached the western and eastern regions simultaneously.

The influence of the Balkans on the Hungarian region was of decisive value and of culture-shaping character for the development of the Bronze Age in Hungary. The cultures of Thrace and Macedonia closely connected with Asia Minor gave this start of decisive importance which reached Hungary chiefly through the Lower Danube regions. The prehistorians are of the opinion that there is an ethnic movement, migration in the background of the process. The strong influence was a lasting one, especially in the eastern half of Hungary.

Influence from other directions also contributed to the development of Bronze Age in Hungary. Among the factors acting from without, according to the subject discussed here, we have to mention the surge coming in

from the Southern Austrian-Slovenian circle, which showed its effect in a great part of Hungary.

In the 16--15th centuries, at the time of the Füzesabony culture, the influence of the Mycenaean culture also reached Hungary.

Besides this we should like to refer to those ethnic movement which, touching also the territory of Hungary, were directed towards the Balkans, and reaching also Asia Minor, are supposed to have destroyed the Mycenaean culture. The role of the Hungarian region in this migration of peoples has been dealt with by archeologists since Heurtley and Tompa. However, opinions differ even today with regard to the role of Hungary and to the events that brought about the movement of the population of the region, as well as regarding the measure of this movement.

Certain prehistorians think that the streaming in of the population of the Tumulus-grave (*Hügelgräber*) culture caused the depopulation of the settlement mounds in the plains towards the end of the 13th century (Reinecke B III, B) and the fugitives together with their pursuers pressed south and south-east. Others connect it up with the movements starting out from the northeast of the Carpathians. They are at variance with the opinions attributing the destruction to the Urnfield (Urnenfelder) culture, and some scholars do not derive the movement from the North. For the clarification of the problem a more accurate dating of the appearance of the Tumulus-grave (*Hügelgräber*) and Urnfield (*Urnenfeld*) cultures in Hungary is needed, with a thorougher knowledge of the events brought about by them in Hungary.

One of the most valuable finds of the last few years is the bronze hydria brought to light at Ártánd, Eastern Hungary, in the course of earthwork. Very likely, it was buried in a princely grave, the other grave goods of which originate from South Russian Scythia or are local products. The hydria was manufactured in a Spartan workshop in the first quarter of the 6th century. Although this date does not determine the time of burial of the find, on the basis of other considerations it can be dated about 550. The publications of M. Párducz and J. Gy. Szilágyi permit me to skip the detailed description of the results of research. However, the subject of my lecture obliges me to emphasise that the Hungarian region was among the buyers of the Spartan workshop, and also to touch upon the problem of the route on which the hydria reached Ártánd, that is the way in which the two regions were interconnected.

According to J. Gy. Szilágyi, it was brought north on the amber route, and then it came by mediation to Eastern Hungary. He does not give a nearer definition to the latter. From the export of the Telesstas group — to which also the Ártánd hydria belongs — altogether three examples are recorded from regions outside Greece, viz.: one from Gela in Sicily, the presumed site of the second would be the area of Mainz in the Rhine region and that of the third is Ártánd. Here, of course, we are interested only in the two latter ones, but both of them are outside the ember route.

Similar is the view of J. Harmatta, according to whom the internal mediators were the people owning the Ártánd finds, viz.: Sigynnae. This is the same people which, in the western part of its territory exchanged horses for Greek products. This at the same time presupposes that, about the mid-

dle of the 6th century, the Great Hungarian Plain was still held by the Sigynnae.

M. Párducz thinks that other routes of transportation can also be taken into consideration. Thus, in the first place, the routes leading through the grassy and sylvan steppe regions of the Dnieper area in Scythia. The possibility of mediation exists since the Ártánd finds and their circle are themselves also connected with several direct and indirect ties to the Scythian culture of these regions, and even their genetical and ethnic relations are likely. The relationship of the regions of the Pontus area with the Greek towns and colonies, however, is proved only as from the second half of the 6th century.

M. Párducz raises the question, again logically, whether the hydria could not be brought to Ártánd by the mediation of the Greek colonies along the western coast of the Black Sea, through Bulgaria or Rumania. Of a slightly later date are the items of evidence according to which a route was leading from Greece to the Carpathian Basin through Histria and the Lower Danube as from the thirties of the 6th century. About a hundred years later (in the second half of the 5th century) another bronze hydria appears at Bene, near the upper course of the Tisza. No doubt this was also imported to the Carpathian Basin and owned by Scythians or by another population from the same period.

We have no evidence of decisive value, viz. hydriae of identical age and type, for any of the three supposed routes of transportation. In spite of all this, research has gained valuable data with the help of the Ártánd hydria regarding the Spartan export and the absolute chronology in Hungary. A reply to the still open questions can be expected, first of all, from the results of investigations in the Balkan regions.

One of the best representatives of relations between Hungary and Hellenistic Greece appears to be the bronze cantharos from Szob. It is of particular value on account of the circumstances of its discovery. It was found in one of the graves of a La Tène C cremation cemetery east of the Danube Bend. However, it did not elicit due attention either in Hungarian or in international research. They rested satisfied with the statement that it was a Hellenistic Greek import. Thus the most important questions have remained open, viz.: 1) the exact dating of the type, 2) the determination of the workshop manufacturing the cantharos itself or its prototype, 3) the route of the cantharos or its prototype to the Danube Bend. Its significance at present is greatest for chronology.

Its analogies made of silver are known from Macedonian and Thracian burials. The tumulus graves of Vergina, Dhreveni, Nikisiani and the tomb of Gorniani have yielded well dated specimens. Greek bronze vessels, including also inscribed examples, a Greek horse bit, and silver drachmae of Philip and Alexander the Great serve as bases for dating. The concomitant finds point unambiguously to an early time, the second half of the 4th century, at any rate to a time before 300.

According to the chronology of Reinecke, Pittioni, or Filip, the surroundings of the Szob cantharos can be dated to the 3rd century at the earliest. On the strict evidence of the criteria of the pottery the second half of the 3rd century and the 2nd century could seem to be a more likely da-

ting. Such a long retardation — as compared with the canthari of the tumuli — is hardly credible.

Thus the time limits of the fashion of metal canthari in the Balkans — especially those of the bronze canthari — could be very important for the dating of the La Tène culture in the Carpathian Basin and, through this, for the dating of Central Europe. In the Hungarian regions the archaeologists reckon with the broad and general spreading of this culture only as late as from the beginning of the 3rd century. La Tène B crosses the Danube towards the east according to the evidence of only sites (Püspökhatvan and Vdc.)

The Szob cantharos does not seem to be the only find in the case of which the Central European La Tène absolute chronology based on contacts, but mostly confined to estimations, fails to agree with the dates suggested by the Greek products. It is remarkable that the contradiction is of a similar character also in other cases, that is to say, the Central European dating seems to be lower as compared with the Greek dating.

What I have in mind is the Isthmia find which was recently discovered by J. L. Caskey. The objects found in a well — terracotta figures, wicklamps, jugs, small bowls, skyphoid crater with relief scene — were manufactured in the third quarter of the 4th century, and there might be even such items among them as were manufacture after 350. Together with them was a pair of barbarian bronze armlets or anklets in the well. This type, however, is dated to La Tène C. Since these blistered armlets are a type characteristic only east of Switzerland, the problem of their dating closely concerns the Central European La Tène chronology. It is questionable, on the other hand, whether the Isthmia finds got into the well at the same time or had gradually been accumulated here or elsewhere before.

The Isthmia find raises the question whether the armlet cannot be dated to a time earlier than the 3rd century. Here two kinds of solution offer themselves. One of the solutions would be its first appearance in a grave at Mörbisch to be dated to La Tène B although the grave goods are supposed to have survived in the early C. The other solution is the possibility that the Central European La Tène chronology is too low, at least with regard to the beginning of C. The latter possibility is supported by the fact that the type of the armlet under consideration is characteristic only as from C, and the Mörbisch find seems to be exceptional.

In the same sense also several other old finds deserve attention; among them I refer here only to glass beads and precious metal beads.

Glass amphora beads are known from six sites in Pannonia, dated La Tène B and C. Closed-grave finds originate from La Tène C, exactly from Kósd situated in the vicinity of Szob. In the Illyrian territory of the Balkans and in the Tessin valley their dating is the 4th to 3rd centuries. The material of the beads is transparent glass — they are frequently accompanied by biconical beads of the same material — of which later also bracelets were manufactured, a material considerably differring from the glass paste. The appearance of the beads precedes the operation of the glass workshop in Switzerland, presumed to exist as from La Tène C.

In Bulgaria a similar bead was found in the Mezek vaulted tomb, in a cremation burial. It was accompanied by the tetradrachma of Alexander the Great, besides other items of Greek import.

From Mezek we are interested also in another cremation burial in which a silver drachma dates a gold jug pendant with filigree ornamentation. A tube bead from the 4th century was also found in the voulted tomb. Their analogies are represented by gold tube beads with filigree ornamentation, alien in their surroundings, from the Szárazd-Regöly finds. The beads with crescent-shaped ornamentation also reflect the relationship with the Hellenistic Greek ornaments in the site. I have to add here that the site known as Szárazd-Regöly is a former swamp situated between the two villages, which, in all probability, was one of the sacrificial places of the Celts. Thus any kind of relationship between its numerous finds or their identical dating would not seem to be reasonable; each of its items requires individual investigation.

By analysing further finds we can perhaps discover an early horizon which would precede the looting invasion of the Celts to Greece and their defeat at Delphoi. However, we cannot go beyond this assumption as long as the aforesaid are not corroborated.

Thus the relations mentioned above testify to the keen interest shown by the Celts of Hungary for Greece and Greek fashion. Such evidences could be increased. It is sufficient to mention here only one important evidence from later times, viz. the coin minting of the Celts for which Hellenistic Greek coins served as prototypes. This is an excellent witness to the fact that, among other things, the Celts of Hungary did not only long for the possession of the treasures of Greece but also wanted to learn from them and from the mediators, in order to make their own life in certain respects similar to the eagerly desired Greek life.

I believe that even the short and incomplete survey given here does not leave any doubt about the fact that the history of the ancient inhabitants of the areas under discussion was not characterized by isolation and rejection of foreign trends, but by energetic movements, lively and animated life, search for the new, increasing demands and far-reaching communication even in phases appearing comparatively peaceful.

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THE POSITION IN THE INDO-EUROPEAN LANGUAGE-FAMILY OF THRACIAN AND PHRYGIAN AND THEIR POSSIBLE CLOSE COGNATES: SOME GENERAL OBSERVATIONS

Recent research on inscriptions of the Graeco-Roman period from the lands known to historians as „Thrace" and „Phrygia", and on place-names and personal names from these and immediately adjacent areas, has greatly clarified our ideas about the ancient languages which were spoken in them during that period and has disposed of several formerly current misconceptions about those languages. But it has also produced a more complex result. We must now reckon with two identified varieties of „Thracian"[1], with two of „Phrygian"[2], with Mysian, with Dacian and with other certainly or possibly related idioms current in Thrace and western and central Anatolia between the 13th century B.C. and the 1st century A.D. Some or all of these idioms may have been „closely related" within the Indo-European language-family. It is obviously important for the reconstruction of the late prehistory of the Thracian region, Greece and Anatolia that they should be satisfactorily distinguished, and associated with historically or archaeologically identified populations; and also that their relations both among themselves and with other IE languages or language-groups should be determined. Since they were spoken in adjacent areas in Graeco-Roman times, and bearing in mind ancient traditions about them, it is not unlikely, *prima facie*, that some or all of them formed a related group within the IE family. To some extent, describing and distinguishing them may involve questions only of terminology or of arbitrarily decided linguistic status: *i. e.* whether a given idiom should be regarded as a „language" or as a „dialect". However, the essential first steps are to establish as well as possible the phonological and other characteristics of each idiom that may provisionally be

[1] V. Georgiev, Trakiyskiyat Ezik (Sofia, 1957); I. I. Russu, Limbă traco-dacilor (Bucharest, 1959). For extensive bibliography on Thracian for 1852—1965 see Zh. Velkova, „Die thrakische Sprache", Balkansko Ezikoznanie (Linguistique Balkanique) XII, 155—84.

[2] O. Haas, „Die phrygischen Sprachdenkmäler", (Linguistique Balkanique X, (1966), 8—10, 16—21, 230—1.

distinguished, and then to compare the phonic and other systems set up for each of them. It will probably prove unusually difficult to reach convincing conclusions about the „degree of relationship" between the various idioms which may be defined. In a recent study of the problems of the method involved in assessing this, H. M. Hoenigswald has suggested that only one type of shared characteristic indicates unquestionably that two idioms within the same family of languages must have evolved from the same dialect or primary derivative of the ancestral language: that is, a shared feature of phonology which may be explained reasonably only as resulting from the merger of phonemes which contrasted in the antecedent idiom.[1] Many will consider this conclusion extreme. But it is certainly difficult to assess objectively what amount and kind of similarity between idioms in features other than phonic phenomena of the kind just explained makes it at least probable that those idioms evolved from dialects which were for a time in specially close contact in comparison with other dialects of the same antecedent language, if the idioms were not derived actually from a single dialect of this. A particular difficulty in the present case is that with the exception of Phrygian, known from inscriptions and regarded by O. Haas as differentiated into two dialects probably from the beginning of the 1st millennium B.C. at least,[2] the idioms in question are identified on the basis of onomastic material only. As a result, it is possible to describe their phonological characteristics and features of word-formation in them only; and so only a partial statement about the degree of similarity of any one of them to others, or to previously known IE languages, can be made.

In general, satisfactory conclusions about the degree of genetic relationship between or among idioms may be expected only if a considerable part of the phonological and morphological systems of each of them is known. If an idiom is postulated on the basis of onomastic material alone, it is unlikely that most of its morphology will be known; and it will only be possible to regard its phonology as satisfactorily known if the names attributed to it contain about as many sounds, consistently distinguished in the orthography, as normally constitute the phonemic system of a language, and if they occur in plausible collocations. It may be difficult to decide whether particular formants, lexemes and patterns of combining lexemes in names belong to the morphology and lexic of the postulated idiom itself; that is to say, to deduce whether those particular features were present in it from the time when it was introduced into the area in which the names attributed to it occur, or evolved in it after its introduction into that area; or alternatively, whether the idiom had taken them over from a language previously in use in the area or had borrowed them from an adjacent or superstrate language. Objective conclusions about such questions will generally depend on whether formants occur not only in names but also in words of the „normal" vocabulary of the idiom, if any are known; whether

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[1] H. M. Hoenigswald, „Criteria for the subgrouping of languages", in H. Birnbaum and J. Puhvel, Ancient Indo-European Dialects (University of California Press, 1966), 1—12; M. R. Haas, „Historical linguistics and the genetic relationship of languages" in T. A. Sebeok, Current Trends in Linguistics III (The Hague, 1966), 116—52; W. Plath, in C. Mohrmann, *Trends in European and American Linguistics* 1930—1960 (Utrecht, 1963), 33—8.

[2] Haas, op. cit, 230—6.

the formants and lexemes show distinctive phonic patterning, and whether this is shared with lexemes of the „normal" vocabulary or not.

Most of the special phonic features which are common to the idioms under discussion here are also shared by other recognized groups or isolated languages of the IE family. („Isolated language" refers to an idiom such as Greek or Armenian which has no specially close cognate within the family and so has the status of a „group", such as the Germanic, in comparison; where „groups" is used *infra*, it will subsume the isolated IE languages). The common possession of these features thus indicates only that to judge by this evidence, the idioms are not closely related to any one of the recognized IE groups which do not share them.

It is difficult to find satisfactory terminology for discussing the comparative linguistics of these languages, which were recently classified as „Thraco-Phrygian", because the latest research has produced different conclusions about definition and grouping of them. For convenience „Thracian and Phrygian" will be used in what follows to refer to all the idioms under consideration, including Dacian, Mysian, the supposed language of the *Βρύκαι* of Macedonia, and O. Haas's putative „Vorphrygisch"[1] of Eastern Phrygia. „Thracian" will refer only to idioms attributed to peoples whom the ancient Greeks regarded as *Θρᾷκες* and to their apparent descendants in the Roman period. „Phrygian" will subsume Haas's „Spätphrygisch", his „Nord-Ost-Phrygisch", and the language attributed to the *Βρύκαι*.[2] This last will be distinguished as „para-Phrygian" where necessary.

CURRENT THEORIES ABOUT THE PRIMARY DIFFERENTIATION OF INDO-EUROPEAN

Ideally, when an additional idiom with IE characteristics becomes known or is provisionally distinguished, it should be compared with languages already recognized as IE without reference to previously accepted conclusions about how Indo-European differentiated into its recognized groups. Evidence from the new idiom might suggest some revision of those conclusions. In practice, comparison of a newly discovered or recognized idiom with apparent cognates is usually made in the first place within the framework of current ideas about the pattern of relationship between them. This is almost inevitable in the case of a new idiom which has been distinguished on the basis of onomastic evidence alone, since its morphology will certainly be imperfectly known, and usually its phonology also.

Most comparisons of Thracian and Phrygian so far have been made within the framework of postulates about the characteristics of IE and the pattern of its differentiation which became generally accepted at the beginning of the present century, essentially those which were systematized by K. Brugmann.[3] Among these „classical" postulates, three are particularly important for IE dialectology: (1) the conclusion that IE had three series of „dorsal" (postalveolar) occlusives: labio-velars, velars and palatals (or palatalized phonemes which became purely palatal in articulation in the „satəm" languages);

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[1] Haas, op. cit., 26—31, 248—50.

[2] Haas, op. cit., 231—4; Stephanus Byzantius, Ethnika, s. v. *Βρύκης*.

[3] K. Brugmann and B. Delbrück Grundriss der vergleichenden Grammatik der indogermanischen Sprachen (Strasbourg, 1889—1900).

(2) the conclusion that a fundamental and early dialectal difference within IE was a divergent treatment of those three series, which resulted in different systems of two series of dorsal occlusives (in some cases including derivative phonemes of different manner of articulation) in all or most of the historical IE groups; *i. e.* the systems characteristic of the so-called „centum" and „satəm" sets of groups; (3) the tacit assumption, accepted at least as a working hypothesis, that the historical groups of IE languages all reflect IE at essentially the same diachronic stage of its development and do not preserve features proper to different phases of it.

V. I. Georgiev has emphasized recently that the differentiation of „centum" and „satəm" dialects may not have been fundamental in the evolution of IE. It seems desirable in considering the relationships of Thracian and Phrygian to other IE languages, and their significance for prehistory, to study them with regard to all the main theories about the primary differentiation of IE which are current, and not only on the basis of postulates which derive from Brugmann's *Grundriss*.

Several theories about the initial differentiation of IE are now current[1]. Two of the more important of them accept the hypothesis of three series of dorsal occlusives or may be reconciled with it; the third cannot easily be reconciled with it. The „centum-satəm" division is still widely regarded as an important dialectal difference, but it is now recognized that some IE language-groups may derive from dialects of IE which were „borderline" as regards the development of the „centum" and „satəm" isoglosses,[2] and that this did not necessarily occur in the earliest phase of IE which may be reconstructed. This phase of IE may not have had three series of dorsal occlusives. Some now consider that a „central" group of the dialects of IE became differentiated from a number of „peripheral" dialects. The tribes or peoples who spoke the „peripheral" dialects would probably have moved out of the region in which IE was in use as a unitary language, the so-called „Indo-European homeland", relatively early; while those who spoke the „central" dialects remained in more or less close contact for some centuries longer, and continued to be a linguistic continuum through which common innovations could spread. The „central" dialects would have developed new linguistic features in common, which will be preserved to some extent in languages derived from them; on the other hand languages which evolved from „peripheral" dialects will have retained archaic features which will have been replaced by innovations in derivatives of the „central" dialects. This pattern of dialectal development has demonstrably taken place in some modern languages which have differentiated into dialects while in use within single, contiguous regions. If the initial differentiation of IE followed this pattern, and the communities which spoke „peripheral" dialects emigrated out of the „homeland" relatively early, then „central" dialects spoken by communities which remained in it would subsequently have evolved for some time as a continuum with which the „peripheral" dialects and their derivatives had now lost contact. Early IE migrations may of course have

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[1] R. A. Crossland, Past and Present, XII (1957), 28—36, XIII (1958), 88; „Immigrants from the North" (Cambridge Ancient History, revised ed., Vol. I, Chapter XXVII, Fasc. 60; 1967), 43—7.

[2] Crossland, Immigrants from the North, 44; Jokl, Acta Jutlandica IX (1938), 127—61.

followed a much more complicated course than such theories about dialectal development suggest. But it is legitimate to consider whether the distribution of isoglosses over the earliest known IE languages, in particular, indicates a process of prehistoric dialectal differentiation of the kind postulated.

Of the three main current theories about the differentiation of IE, that proposed by G. Bonfante regards a division of its dialects into „central" and „peripheral" sets as fundamental and treats „proto-Anatolian", the dialect from which Hittite, Luwian and their close cognates developed, as „central" in spite of the early date at which Hittite was in use in Anatolia.[1] The theory put forward by W. Porzig and A. Kammenhuber locates the region of origin of the IE-speaking peoples in Northern Central Europe and regards as basic a division of the IE language-groups into eastern and western sets, which does not correspond to the „centum-satəm" division; Greek and Hittite supposedly evolved from dialects which were carried eastwards at an early stage in the dispersal[2]. The third main theory holds that the dispersal of the Indo-Europeans took place in at least two phases and that the Hittite-Luwian („Anatolian") group of IE languages derives from a dialect which was carried out of the region form which the dispersal proceeded before all or most other dialects. The extreme form of this view is the „Indo-Hittite hypothesis" of E. H. Sturtevant. According to this „proto-Anatolian" lost contact with the other dialects of IE before they were significantly differentiated, and all the dialects from which historical IE groups other than the Hittite-Luwian evolved developed in contact for some centuries afterwards.[3] A form of the theory which was adumbrated by A. Meillet in 1932[4] has much to recommend it. Its conclusion is that a number of the language-groups which were in peripheral positions within the contemporary region of IE speech when first attested in the first millennium B.C. or in the first centuries A.D., were derived from dialects which were carried out of the original IE continuum relatively early, while other groups had evolved from „residual" dialects which had remained in contact for some centuries longer. Languages of the former groups share innovations. „Peripheral" or „archaic" groups are the Hittite-Luwian, the Italic and the Celtic (or the Italo-Celtic) and Tocharian. An important morphological isogloss among these is a system of medio-passive verbal inflexions mainly characterized by *-r* or *-r-* (c. f. Latin *amatur*; Hittite *kittari* 'lies'). Greek, Indo-Iranian and probably Germanic, Baltic and Slavonic are to be regarded as „residual" and innovating. If Indo-Iranian, Baltic, Slavonic and Armenian are assigned to the „residual" set of groups, it is natural to regard the „centum" system

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[1] G. Bonfante, Indogermanische Forschungen LII, 221—6, LV, 131—4; Revue belge de philologie XVIII, 381—92; Révue des études indo-européennes I, 353—76; American Journal of Philology LXVII, 289—310; Word I, 139—40; cf. Crossland, Proc. VIIth International Congress of Linguists I, 152—3, II, 498—500.

[2] W. Porzig, Die Gliederung des indogermanischen Sprachgebiets (Heidelberg, 1954), 213; A. Kammenhuber, „Zur Stellung des Hethitisch-Luvischen innerhalb der indogermanischen Gemeinsprache", Zeitsch. f. vergleichende Sprachforschung (KZ) LXXVII (1961), 31—75.

[3] E. H. Sturtevant, The Indo-Hittite Laryngeals (Baltimore, 1942), 23—30; E. H. Sturtevant and E. A. Hahn, Comparative Grammar of the Hittite Language I (Yale University Press, 1951), 8 - 9.

[4] Meillet, „Essai de chronologie des langues indo-européennes", Bull. de la Soc. de Linguistique de Paris XXXII (1931), 1 ff.

of dorsals as that of early IE and to explain the „satəm“ system as the result of phonetic changes which took place in a certain number only of the dialects of the „residual“ set after the „peripheral“ dialects had lost contact with them.

THE DIALECTAL POSITION OF THRACIAN AND PHRYGIAN AND THEIR POSSIBLE CLOSE COGNATES

The following features appear most significant for determining the dialectal position of these idioms within the IE family.

1. Thracian, Dacian and Mysian have the „satəm“ sub-system of dorsal consonants, while Phrygian and para-Phrygian have the „centum“ sub-system.[1]

2. All the idioms have a system of occlusive consonants, or in some cases of occlusive and fricative consonants, which is explained as the result of parallel phonetic changes in the IE system of occlusives, the so-called „Lautverschiebung“ in which, e. g., IE **k*, **g*, **gh*>(kh) or (k'), (k), (g); with subsequent change of (kh) or (k') to (x) in some idioms.[2] Essentially the same changes occured in Germanic and in Armenian, and allegedly in Illyrian, if this is to be treated as a defined language.[3]

3. Phrygian shares a number of features with Greek. One of these, the use of the augment in past or „secondary“ categories of the verb, is common also to Armenian and Indo-Iranian.[4]

4. Phrygian has medio-passive verbal forms with inflexions ending in *-or* (e. g. *αδδακετορ*[5]) which are characteristic also of Celtic, Italic, Venetic, the Hittite-Luwian languages, Tocharian and possibly Armenian.[6]

The general conclusion from these characteristics would seem to be that the dialects or primary derivatives of IE from which Thracian and Phrygian developed were spoken in the central part of the region in which the differentiation of IE and the dispersal of the IE-speaking peoples began, but that among them proto-Phrygian[7] had a relatively peripheral position or was carried into a peripheral part of the total region over which prehistoric IE languages came to be spoken during a relatively early migration out of the „homeland“ (later however than the movement which introduced proto-Anatolian or derivatives of it into Anatolia). If the hypothesis pre-

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[1] Haas, op. cit., 212—5.

[2] Haas, op. cit., 144—6, 209—12, 245—6.

[3] E. Polomé, „The position of Illyrian and Venetic“ in H. Birnbaum and J. Puhvel, „Ancient Indo-European Dialects, 59—76.

[4] Haas, op. cit., 236—8.

[5] Haas, op. cit., 226.

[6] J. Friedrich, Hethitisches Elementarbuch I (Heidelberg, 1940), 35—6, 60—2, 78; E. H. Sturtevant and E. A. Hahn, Comparative Grammar of the Hittite Language I, 146—7; V. V. Ivanov, Khettskiy Jazyk (Moscow, 1963), 149, 163—6; E. Neu, Das hethitische Mediopassiv und seine indogermanischen Grundlagen (Studien zu den Boğazkoy-Texten VI. Wiesbaden, 1968); W. Schulze, E. Sieg, W. Siegling, Tocharische Grammatik (1931), 323—5; H. Lewis and H. Pedersen, Concise Comparative Celtic Grammar, 301—11; A. J. Beattie, Trans. of the Philological Society 1949, 16—7.

[7] „Proto-Phrygian“ and similar terms refer to a postulated dialect of Iudo-European from which a historical isolated IE language (see p. 2 above) or group of cognate IE lanruages, and no other identified historical language, was derived. „Pre-Phrygian“, e. g., refers to any diachronic phase of a postulated dialect of Indo-European during its development into its believed historical derivative or derivatives.

ferred here about the course of the primary differentiation of IE is accepted, the „satəm“ consonantal system of Thracian, Dacian and, probably, Mysian indicates that they developed from one or more „residual“ (previously „central“) dialects. The isoglosses between Phrygian and Greek suggest that proto-Phrygian was not one of the very first dialects to be carried out of the IE continuum and to lose contact completely with dialects of the „central“ group. Greek is to be regarded as a „central-residual“ dialect, in view of the features which it shares with Indo-Iranian, most of them best explained as innovations.[1] If one accepts that the „centum-satəm“ distinction developed late, within a certain number of „residual“ dialects, then the fact that the Thracian and Dacian idioms have the „satəm“ consonantal system and Phrygian the „centum“ is not inconsistent with a conclusion that they evolved from a single dialect of IE or from dialects which were originally contiguous. The incidence of the „Lautverschiebung“ among the IE languages is consistent with its having been a prehistoric development shared by a number of „central“ or „residual“ dialects: Proto-Germanic and proto-Armenian appear to have been „central“ dialects. But one should note that the consonantal system of Armenian may have been subject to the substrate influence of a non-IE Anatolian language, either directly or through the medium of an IE language which had been introduced into Central Anatolia and had become current there some centuries previously. Hittite and its close cognates had reduced the three IE orders of occlusives to two by the middle of the 2nd millennium B.C.[2] The changes which produced the „satəm“ sub-system of consonants, and those of the „Lautverschiebung“, would have occurred in overlapping areas within the „central“ or „residual“ dialect-continuum of IE. It is not surprising to find isoglosses between Phrygian and Greek, and between Phrygian, Greek and Armenian. There are strong arguments for concluding that proto-Greek was a „central-residual“ dialect, of the set which did not develop the „satəm“ characteristics; and there are important isoglosses between Greek and Armenian only, and between Greek, Armenian and Iranian. Isoglosses between Hittite (or another language of its group), Greek and Phrygian suggest that proto-Anatolian was contiguous to proto-Greek and proto-Phrygian within the original IE continuum. The occurrence of medio-passive verbal forms in *-r* in Phrygian is somewhat unexpected, in view of its considerable similarity to Greek. However, O. Haas's conclusion that para-Phrygian was in use in Macedonia in the 2nd millennium B.C.[3] has made it less surprising (see below p. 235). Finally, the isoglosses which have been noted between Baltic and Dacian or Thracian or both[4] were not unexpected. It seems reasonable to class proto-Baltic as „central-residual“ and to deduce that it was spoken somewhere in Northern Central Europe, between the areas in which

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[1] R. Birwe, Griechisch-Arische Sprachbeziehungen im Verbalsystem (H. Vorndran, Walldorf-Hessen, 1955); Crossland, Immigrants from the North, 45—6.

[2] Sturtevant and Hahn, Comparative Grammar of the Hittite Language I, 26—8. 55—64; Th. V. Gamkrelidze, „Klinopisnaya sistema akkadsko-khettskoy gruppy i vopros o proishozhdenii khettskoy pis'mennosti“, Vestnik Drevney Istorii I (LXXVII) (1959), 9—19; „The Akkado-Hittite syllabary and the problem of the origin of the Hittite script“, Archiv Orientální XXIX (1961), 406—18.

[3] Haas, op. cit., 231.

[4] I. Duridanov, „Thrakisch-dakische Studien: I. Die thrakisch- und dakisch-baltischen Sprachbeziehungen“, Linguistique Balkanique XIII/2 (1969).

proto-Germanic and proto-Slavonic were in use, in the 1st millennium B.C. and so probably already in the last centuries of the 2nd millennium, if not earlier.

DEDUCTIONS FROM LINGUISTIC EVIDENCE ABOUT THE LATE PREHISTORIC POPULATIONS OF SOUTH-EAST EUROPE

Before these are attempted, it may be useful to consider what conclusions about the ethnic prehistory of a region may be based: (a) on its earliest known onomastikon; (b) on the patterns of similarity and difference between its earliest attested language and any cognates of this which may be known.

Regarding deductions from onomastics, it is not legitimate to assume that the language to which the earliest distinguishable onomastic stratum of an area belonged had been spoken in it from the time when settled occupation began in it until the time when names of that stratum are first attested in documents. Such an assumption involves an unjustified *argumentum e silentio*. It is true that immigrants generally tend to adopt place-names, particularly names of natural features, which they find in use among the pre-existing population of the region into which they have moved. But in some cases immigrants adopt very few indigenous place-names and the toponymy is almost completely changed, as happened during the Germanic settlement of England. Consequently it should not be assumed that the oldest place-names that can be identified in an area had necessarily been in use in it for more than a few centuries at the most before the documents in which they occur were written. One cannot exclude the possibility that they had been introduced by relatively recent immigrants and that an older onomastikon had been replaced without trace. Neither should one assume that any immigration which would have resulted in a change of language would necessarily have caused other cultural changes also which would be clear in the archaeological record. In general, reliable conclusions about the linguistic prehistory of an area may be made only for a period of two or three centuries before its earliest surviving documents were written, at the most. The exceptional cases will occur when a process of language-dispersal is convincingly reconstructed for a larger region, of which the area in question forms part.

Deductions about prehistoric migration and settlement from similarities between cognate languages involve two main questions: first, whether in the region and period under consideration a language is likely to have been adopted by new populations if it was not actually introduced into their territories by immigrants; secondly, whether any reliable estimate can be made of the length of time which had elapsed between the primary differentiation of the language from which the historical cognate languages had evolved and the periods in which these are first attested. It still seems impossible to calculate plausibly how long the derivatives of a postulated prehistoric language took to diverge as far as they had done when first known. „Glottochronology", which aims at solving the problem involved statistically, postulates that the „basic vocabulary" of all languages changes at approximately the same rate whatever the circumstances in which they are used during particular periods. It has apparently not given plausible

results when applied to some languages whose change in vocabulary can be observed over several centuries.[1] On the other hand, the idea that a language, like an organism, has a „natural development" which requires a minimum time to run its course belongs if it is valid at all to cultural and social history rather than to linguistics as it has generally been defined. It seems to stem from what may be observed of the development, as standard or literary languages, of idioms which had an unusually important political or cultural role for some centuries, for example Latin. It is unsound to base analogical conclusions about the speed of change or differentiation in a prehistoric language on the known speed of change in a historical language which had a cultural role like that of Latin, and on the speed of the process by which it differentiated into derivative languages, if it did so. The divergence of Icelandic from the other Scandinavian languages may provide a more probable analogy for the prehistoric development of primary IE languages, after the initial dispersal of the Indo-Europeans had begun, than the differentiation of Latin into the Romance languages does. The Norsemen who settled in Iceland were cut off from frequent contact with those who remained in Scandinavia. But the divergence even of the Scandinavian languages in the Middle Ages may have been inhibited to some extent by the effect of a common literary tradition. The rate of change of Arabic and Greek over the periods in which they are known is certainly likely to be atypical, since both were so important as the media of literary and religious traditions. But it is true that Lithuanian, which had no such long tradition of literary use, appears to have evolved as slowly as Greek did.

To judge by the languages of surviving culturally „primitive" communities, it is not probable that the languages of the peoples of South-Eastern Europe and Western Asia north of the Black Sea and the Caspian in the 4th and 3rd millennia B.C. were significantly less „stable" or „systematic" than those of literate peoples of the 2nd and 1st millennia; *i. e.* there was probably no greater variation than in languages spoken to-day among the ideolects of individuals or the micro-dialects of age-sets, or in the usage of individuals on different occasions. The degree of difference among the languages of the main regions which are still inhabited by „primitives" might appear to offer the best indication of how quickly the language of a prehistoric community at a late palaeolithic or neolithic[2] cultural level was likely to change under different local conditions. However, it varies greatly among the principal regions where culturally „primitive" peoples still exist. The idioms of the Eskimos are remarkably similar over an extensive region; the languages of the aborigines of Australia are now reported to be cognate, with the exception of a few small enclaves, and to show a steady rate of difference in vocabulary from neighbouring group to neighbouring group across the continent; on the other hand the languages of New Guinea differ radically; it seems unlikely that genetic interrelation will be demonstrated for all of them, and so far few sets among them have been shown

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[1] E. Polomé, „Considérations sur la valeur des données lexicostatistiques" in Communications et rapports du Ier Congres International de Dialectologie Générale (Louvain, 1964), 29 ff.

[2] „Neolithic" is used here for convenience, referring to the cultural levels of all communities which had come to rely predominantly on agriculture for their food and had not yet begun to make regular use of any metal.

to constitute families.[1] It is of course possible that the principal reason for the striking difference in degree of linguistic differentiation between the peoples of New Guinea and the Eskimos and the aborigines of Australia is that the former have been living in their present territory longer than have the two latter. But the physical differences between their territories and the different economies of the peoples themselves may have been the main cause. The peoples of New Guinea apparently practice primitive agriculture for the most part, remaining within restricted tribal territories which are largely isolated from each other by mountains. The Australian aborigines and the Eskimos live by food-gathering and hunting (though at different levels of specialization) and they are nomadic, although they operate generally within tribal territories. The manner of life of the Papuans seems likely to lead to extreme isolation of small communities and so to linguistic differentiation. The Eskimos and the Aborigines appear to have lived in ways which have involved sporadic contact between neighbouring tribes at least, and this presumably has tended to inhibit the divergence of adjacent dialects. In general, the only pressure on culturally primitive communities who speak dialects of the same language to keep their idioms mutually intelligible will have been the need for communication for purposes of trade, intermarriage and perhaps collaboration in war. However, only archaeology is likely to show us how long the native languages of Australia, for example, had taken to differentiate to their present degree, if it can establish how long ago the ancestors of the present tribes of the continent arrived in it, presumably bringing in the idiom from which the languages of most of them evolved. (This may be possible for Australia, since migrations into it are not likely to have been frequent, and its ethnic and cultural prehistory may be relatively easy to work out, with modern techniques.[2]

The modern linguistic phenomena which have just been discussed obviously offer no certain indications about the date of the primary differentiation of IE. They do however suggest that peoples who lived a semi-nomadic life on the western Asiatic steppes might have formed a linguistic continuum and have used an essentially homogeneous language for some centuries, rather than that the sedentary agricultural communities of the Danubian and adjacent regions in the 4th and 3rd millennia B.C. might have done so. In other words, such deductions as may be made about linguistic differentiation and rate of change in languages in preliterate periods do not conflict with the hypothesis that the Indo-European-speaking peoples dispersed from the western steppes or from the Pontic region in the 3rd millennium.[3] The rate of change of individual IE languages after they had been introduced into new areas probably varied greatly, according to the relative numbers of the IE-speaking immigrants and the pre-existing population in each and the cultural level of this population. It seems possible

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[1] S. A. Wurm, „The present state of New Guinea and Australian linguistics", Proc of the IXth International Congress of Linguists (1962).

[2] H.-G. Bandi, Eskimo Prehistory (London, 1969; trans. A. E. Keep); J. L. Giddings, Ancient Men of the Arctic (London, 1968); McBryde, „Radiocarbon dates for northern New South Wales", Antiquity XL (1966), 285—92; D. J. Mulvaney, The Prehistory of Australia (London, 1969).

[3] Crossland, Immigrants from the North, 49—52.

that, granted some previous dialectal differentiation in the IE „homeland“ and adoption by populations which spoke languages different in phonology from IE, the earliest known IE languages might have developed the degree of divergence which they show in less than five hundred years.

THRACIAN AND PHRYGIAN IN THE DIFFERENTIATION OF INDO-EUROPEAN

There appears to be no difficulty in concluding that the languages which were immediately ancestral to Thracian, Phrygian and their close cognates were introduced into S. E. Europe from territories to the north-east of it in the second half of the 3rd millennium B. C. or early in the 2nd. Isoglosses suggest, first, that proto-Dacian and proto-Mysian (if Thracian, Dacian and Mysian were derived from more than one dialect of IE) formed part of a continuum in which the „satəm“ sub-system of dorsal consonants developed; and, secondly, that these dialects, together with proto-Phrygian, proto-Germanic and possibly proto-Armenian formed a continuum overlapping with this, in which the „Lautverschiebung“ took place. At the same time, there are indications that proto-Phrygian was in contact with proto-Greek. The incidence of the isoglosses in question would be natural if these dialects or primary derivatives were spoken within a contiguous region which ran westwards, north-westwards and south-westwards from the west of the central part of the total region of IE speech as it was at the end of the 3rd millennium. Proto-Thracian (and proto-Dacian and proto-Mysian if distinct) would have been in use in the central and the eastern part of this western-central region; proto-Phrygian was probably in use in the south-western part (in view of its non-participation in the „satəm“ consonant-changes and its archaism in retaining medio-passive verbal forms in *-r*); proto-Greek was probably spoken in the south-eastern part, and was in contact with proto-Armenian and proto-Iranian. The conclusion suggested here about the location of proto-Phrygian (or pre-Phrygian) at this time involves accepting that most of the tribes who spoke pre-Phrygian idioms migrated eastwards to Anatolia at the end of the 2nd millennium B.C.[1] If a „satəm“ language related to Thracian, Mysian or a similar idiom, was in use in eastern central Anatolia by 1000 B.C.,[2] then it might have been introduced there from Thrace before the Phrygian movement eastwards into N. W. Anatolia took place, or it might have been brought in by a migration which passed through the Phrygian areas during the fluid conditions at the time of the destruction of the Hittite Empire c. 1200 B.C. or a little later.

The most difficult problem is presented by Greek. Before pre-Greek was introduced into Greece itself, proto-Greek would appear to have been in use in an area south of that in which the idiom ancestral to Thracian was spoken, but near to that in which proto-Armenian and the pre-Iranian dialects of Indo-Iranian were current. The area which comes to mind is some part of Thrace itself. Possibly proto-Greek tribes preceded the ancestors of the Thracians there and were driven out by them. J. M. Mellaart's theory

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[1] Haas, op. cit., 231
[2] Haas, op. cit., 26—31.

that they moved into Greece by way of N. W. Anatolia[1] would fit the linguistic data. But it is difficult to believe that Greek-speaking immigrants, who apparently settled throughout the whole of Greece from southern Macedonia southwards early in the 2nd millennium, could all have moved there by sea from a small area in the Troad which they had occupied for a short period.[2] It seems likely, therefore, that the proto-Greek migration came into Greece from lands to the north-east of it, and that it passed to the east of the region which was then occupied by the peoples who spoke pre-Phrygian.

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[1] Mellaart, „The end of the Early Bronze Age in Anatolia and the Aegean", American Journal of Archaeology LXII (1958), 9—33; „Anatolia *c.* 4000—2300 B.C." (Cambridge Ancient History, rev. ed., Vol. I, Chap. XVIII/Fasc. 8; 1962) Secs. III, VI; „Anatolia *c.* 2300—1750 B.C." (C. A. H. rev. ed., Vol. I, Chap. XXIV/Fasc. 20; 1964) Sec. VI (47—50).

[2] Crossland, Immigrants from the North, 26—8; c. f. D. H. French, Anatolian Studies XVII (1967), 49—100; R. G. Howell, Preliminary Report on Excavations at Lefkandhi (British School of Archaeology at Athens Supplementary Volume, 1967).

si celle-ci est propre au phrygien et au macédonien, ils n'ont rien de commun avec le grec qui ne la connaît pas.

M. Michailov fait certaines observations à propos du „thrace" et du „daco-mésien". 1° En ce qui concerne les éléments comme *-bria, -dava* etc., il pense que les noms en *-bria* sont les plus anciens. Il se peut qu'un élément (mot) disparaisse pour être remplacé par un autre, par ex. *-bria* par *-dava.* 2° Au début de l'époque romaine la région du limès danubien a été déthracisée pour des raisons militaires et les Thraces que nous y trouvons plus tard, sont des nouveau-venus. Cela devient évident par l'onomastique. C'est aussi l'oponion de M. B. Gerov. 3° Pour interpréter des cas comme *Pulpudeva,* il faudrait procéder du point de vue suivant: c'est la population qui a traduit le nom grec en thrace. Une chose non moins importante: la même population employait pour πόλις aussi le mot *dina,* un mot panthrace, car la forme bulgare médievale *Plovdinъ* provient de *Pulpudina.* 4° En ce qui concerne la méthode de travail, deux procédés, qui ne s'excluent pas, mais se complètent réciproquement, devraient être employés: la méthode de l'étymologie et la méthode de l'analyse interne, qui dans certains cas devrait précéder la première.

. MELLAART (Angleterre)

„In connection with Prof. Crosslands paper I want to draw attention to a number of points which have not yet been considered:

1. We hear much about steppe cultures — and its mobile population — in contrast to sedentary settlements.

2. Do we know whether the Pontic steppe of today was steppe then?

3. All the Pontic culture from Dnepr to sea of Azov are said to be (Merpert and Gimbutas) to have been agricultural and settled in the 4th and 3rd millenium.

4. Which then are these steppe cultures with their nomads and its assumed superiority through its horses in the 4th and 3rd millenium B. C.?

5. What is the use of a horse if you do not ride it or you have no chariots — as is well established? Horses are not strong enough to pull carts with solid wheeles which weighed half a ton, only oxen could.

6. If there was no steppe along N. Pontic coast but forest, the horse would not be found there.

7. Gimbutas is aware of this and therefore puts the steppe cultures, her Kurgan culture on the Don and the Volga (extends into Kazahhstan).

8. Could this area really be considered as the area from which *IE spread over the whole of Europe*? Is its potential in population *so enormous*? I somehow doubt this on economic grounds?

9. Is there really a contrast between horses + nomads and patriarcal religion and sedentary agricultural settlements?"

G. I. GEORGIEV (Bulgarie)

Aprouve la communication de M. Mellaart, parce que le matériel nouveau dont disposait l'auteur lui a permis de corriger ses anciennes conceptions. Le tableau ne correspond pas dans le détail, pour ce qui concerne la période ancienne. Le bronze ancien d'Asie Mineure (Troie I) correspond à Ezero. Il y a des relations entre Troie I et II et la Thrace. Mais plus tard la Thrace évolue d'une manière particulière; la IIIe couche de Ezero et Kirilmetodievo correspond à Troie IV—V, mais des relations sont étroites. Il est d'accord avec des vues de Mme Kutzian.

M. GARAŠANIN (Yougoslavie)

Demande à M. Mellaart si on devrait parler d'export de cultures ou bien de relations ethniques. Se prononcant sur le rapport de M. Mellaart il pense qu'on pourrait faire un colloque sur tout ce que l'auteur a dit. Sur le synchronisme — ce que M. Dumitrescu a dit correspond à ses conceptions. Starčevo et Karanovo ont été traités comme des périodes trop courtes. Le néolithique crétois lui paraît mis trop tôt. Les matériaux de Dimini sont identiques à ceux de Vinča, d'après lui. Sur Nea Nicomedia est d'accord avec M. Dumitrescu. Mais on y a trouvé, en plus de la céramique grossière, une céramique fine. Donc la céramique grossière de Nea Nicomedia aurait pu pénétrer plus tard en Thessalie.

Réponses des rapporteurs:

MELLART (Angletere)

„Je suis très reconnaissant à mon collègue, le professeur Dumitrescu, d'avoir corrigé mon tableau chronologique. On ne discute pas quand on a tort et le professeur Dumitrescu connaît les matériaux de Roumanie, alors que moi — je ne les connais pas.

A propos de la correction des datations par le C14, proposée par Quitta, Bucha et Suesz, ces données physiques ne se présentent pas encore clairement à l'archéologie et on peut les accepter ou ne pas les accepter.

La datation de Nea Nikomedeia fixée aux environs de 6200 av. n. è. est maintenant complétée par d'autres datations établies grâce au C 14. Elles vont de 5700 à 5800 av. n. è. Il est possible que cette première datation ait été trop haute."

I. BOGNÁR-KUTZIAN (Hongrie)

„I am in agreement with Prof. Dumitrescu about the definition of the Körös, Criş etc. as groups instead of cultures. I myself expressed as early as in 1944 my conviction that it represents the northern — and at the same time a peripherial — part of a widespread mediterranean culture.

But I cannot share Prof. Dumitrescu's opinion — discussed between ourselves some months ago — about the dating of the clay tablets at Tărtăria. In connection with his assumption arises que question how to explain the fact, that the pictograms are found on the Vinča pottery both in Transylvania and in Yugoslavia. (At the site of Tordos there are two hundred or

more examples). On the other hand there are no pictograms at all in the Coţogeni culture, as far as I know.

Concerning Prof. Garašanin's question about the origin of the Lengyel culture, I am not in the position to tell more than I did in my lecture and in two previous papers. The views differ and the archaeological finds answer reluctantly.

I was glad to hear that Dr. Georgiev agrees with me in the questions about the origin and dating of the cross-edged copper axe-adres in Bulgaria. It seems to be an important point in the efforts made to establish a synchronization between the Carpathian Basin and the Balkans.

Different possibilities concerning the trade routes between Hungary and Greece were taken into consideration by Prof. J. Harmatta, Dr. M. Párducz and Dr. J. Gy. Szilágyi, the ancient amber route among others. As the problem cannot be regarded as settled, I am convinced that Prof. Condurachi's remarks will be very valuable for the further research.

I feel that my assumption that the absolute chronology of the Middel La Tène Period in Central Europe is in need of some corrections, is confirmed by the remarks of Mrs. Garašanin and Dr. Ivanov. Their valuable information regarded the area situated between Hungary and Greece i. e. territories which connected the Celts in Hungary with Hellenistic Greece. And even some new finds in Greece show that the Central European dating (at least for La Tène C) may be to low."

TABLE DES MATIÈRES

СТУДИЯ БАЛКАНИКА, ТОМ V

*

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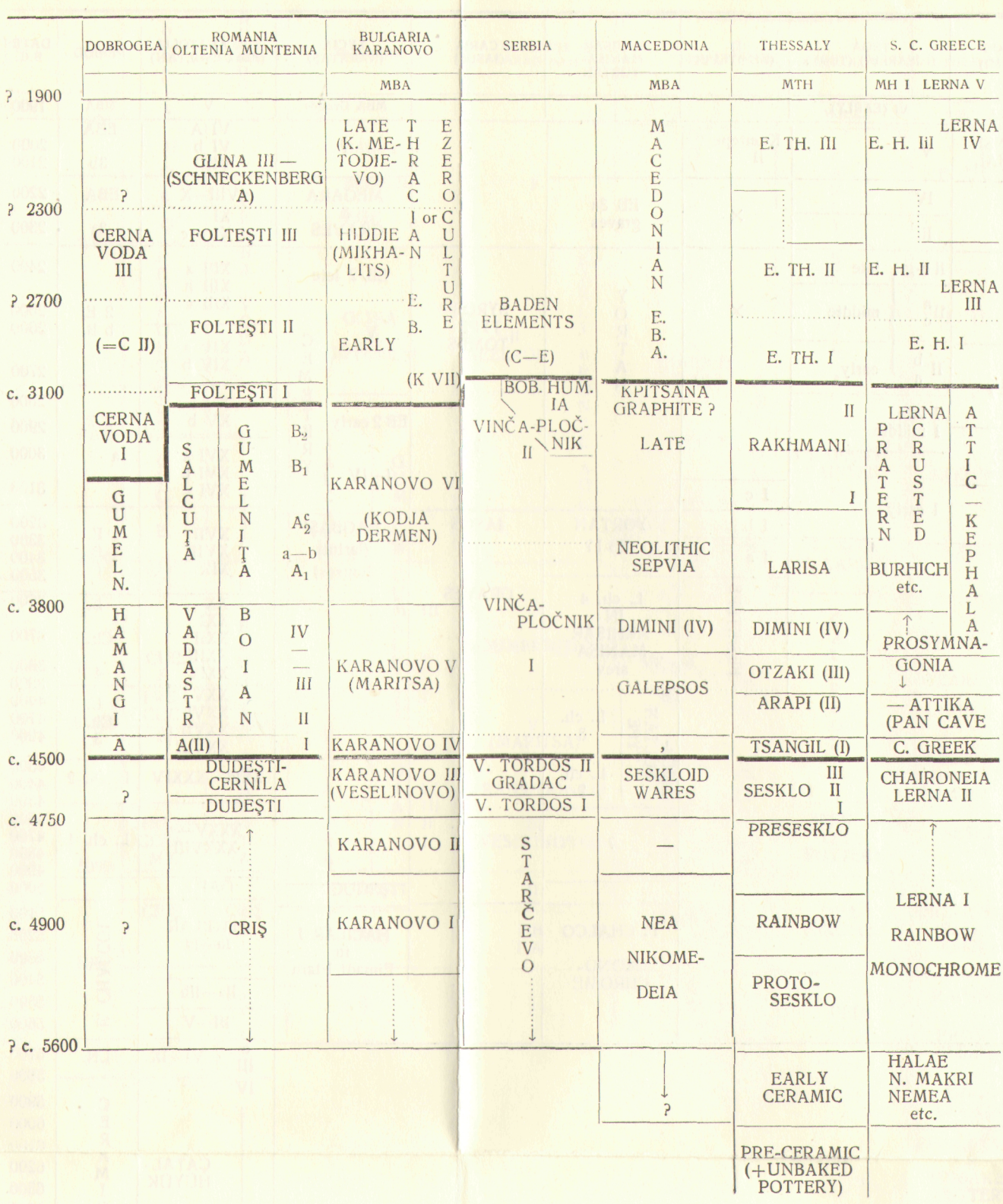
Western Anatolia

CHIOS (EMPORIO)	SAMOS	LEMNOS (POLIOCHNI)	LESBOS (THERMI)	TROA (HISARLIK) (TROY)	D (KUMTEPE)	AKHISAR-MANISA-YORTAN	CARIA (IASOS)	LYCIA (KARATAŞ)	SW. ANATOLIA (BEYCESULTAN)	PERIOD	DATES B.C.
	MBA		MBA	VI (EARLY)				MBA Graves	V	MBA	1900
	HERAION	VI (BROWN)	TRANSI-TIONAL	V	Kumtepe II			?	VI A VI b VII	EBA 3b	2000 2100
×	IV	—		IV III	×	EB 3a graves		MEGARA & GRAVES	VIII—X XI XI a c	EBA 3a	2200 2300
I	III	V (YELLOW)		II e-g late II a c middle	×	YORTAN	SYROS TYPE TOMBS	EB 2 lete V CEMETERY	XIII a XIII b XIII c	2 E. b B.	2400 2500
II	II	IV (RED)	V IV (c′)	II b a early I late I middle	×			EB 2 early I—IV	XIV a XIV b XV a XV b	2 2_1	2600 2700 2800 2900
III IV V		III (GREEN)	III (B) II A I	I early	I c I b I a	YORTAN EB I?	? IASOS	BAGBAŞI (larlut) houses)	XVI a XVI b XVI c XVII XVIII XIX	a E. B I	3000 3100 3200 3300 3400 3500
VI VII (6 building — levels)	T I G A N I	II B II A (BLUE) I (BLACK)			BESIKTEPE	L. ch. 4 IN AKHISAR MANISA arev	GRAVES		XX XXI XXII XXIII XXIV	L. Ch. 4	3600 3700 3800
VIII IX	6 ..... Levels					BEICE-SULTAN TYPE L. ch. 3 L. ch. 2			XXV XXVI XXVII XXVIII	L. Ch. 3	3900 4000 4100 4200
						?			XXIX—XXXIV	L. ch. 2	4300 4400 4500
									XXXV—XXXVIII	L. ch. 1	4600 4700 4800 4900
A. GALA (CHIO)						F. CHALCO		HACILAR I in Eimadi Plain	GAP ? HAGILAR Ia—Id	E. CHALCOL.	5000 5100 5200 5300
MONO-CHROME						MONO-CHROME			IIa—IIb III—V		5400 5500 5600
									o III VI—IX IV ÇATAL-HÜYÜK XII	LN. CERAMIC NEO	5700 5800 5900 6000 6100 6200 6300 6400 6500 6600
									ACERAMIC SUBERDE ACERAMIC HACILAR	AC N E O	6700 6800 6900 7000 7100 7200

	MOLDAVIA	DOBROGA	ROMANIA	BULGARIA (KARANOVO)	SERBIA	MACEDONIA	THESSALY	CEHTRAL, SOUTH GREECE	AEGEAN ISLES	
									CRETE	CYCLADES
1900						M.B.A.	M. TH.	MH. I (LERNA V)	MHIA	M.C.
	HORO	CERNA VODA	EARLY BRONZE AGE	?	DONJA SLATINA	EARLY BRONZE AGE	E. TH. III	E. H. III (LERNA IV		KEROS—SYROS CULTURE
2300	DEA/FOLTEST		GLINA & COŢOFENI	VII (EZERO) EARLY BRONZE AGE	CORDED WARE A E		E. TH. II	E. H. II (LERNA III)	E. M. II	
							E. TH. I	E. H. I	E. M. I	GROTTA — PELOS CULTURE
3100	CUC. B.		SALCUŢA GUMELN IV		BADEN D C	GRAPHITE PAINTED etc.	RAKHMANI	patt. burn. ATTIC	CRETAN NEOLITHIC	
					VINČA D / BUBANJ HUM	L. NEO. cf. LARISA	LARISA	PROSYMNA GONJA DIMNI POLYCHROME KEPHALA		
3600	CUC. A/B	GUMELNIŢA	GUMELNIŢA III	VI (GUMELNIŢA)	C_2 PLOČNIK	GALEPSOS	DIMINI (IV)	DIMINI		
	CUC. A		II		C_1 VINČA		OTZAKI (III)	ARAPI (MARATHON)		SALIAGOS I — 3
A 300	PRE-CUC		I	V (MARITSA)	B_2		ARAPI (II)			
	III — I	HAMANGIA	VADASTRA BOIAN V IV III II I	IV (TRANSITIONAL)	B_1		C. GREEK Matt. Painted (I)	C. GREEK Matt. Painted		
	LINEAR CERAMIC			III (VESELINOVO)	A_3 TURDAŞ VINČA A_2 A_1	SESKLO LIKE POTTERY	SESKLO I—III	CHAIRONEIA		
5000	CRIŞ	CRIŞ ?	DUDEŞTI	II	STARČEVO	NEA-NIKOMEDEIA	PRE—SESKLO (Barbotinei Cardium)	RAINBOW	?	SKYROS (MONOCHROME)
			CRIŞ	I B I A			RAINBOW			
5300		↓ ?	↓ ?	↓ ?	↓ ?		PROTO-SESKLO	NEA MAKRI		
							EARLY CERAMIC			
							PRE-CERAMIC + UNBAKED POTTERY ↓			


DOBROGEA
ROMANIA OLTENIA MUNTENIA
BULGARIA KARANOVO
SERBIA
MACEDONIA
THESSALY
S. C. GREECE
MBA
MBA
MTH
MH I LERNA V
? 1900
? 2300
? 2700
c. 3100
c. 3800
c. 4500
c. 4750
c. 4900
? c. 5600
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CERNA VODA III
(=C II)
CERNA VODA I
GUMELN.
HAMANGI
A
?
?
GLINA III — (SCHNECKENBERG A)
FOLTEŞTI III
FOLTEŞTI II
FOLTEŞTI I
SALCUTA
GUMELNITA
VADASTRA
A(II)
B2
B1
A2c
a—b
A1
IV
III
II
I
DUDEŞTI-CERNILA
DUDEŞTI
BOIAN
CRIŞ
LATE (K. METODIEVO)
THERACIAN
EZEROCULTURE
HIDDIE (MIKHALITS)
I or A
EARLY
E. B.
(K VII)
KARANOVO VI
(KODJA DERMEN)
KARANOVO V (MARITSA)
KARANOVO IV
KARANOVO III (VESELINOVO)
KARANOVO II
KARANOVO I
BADEN ELEMENTS
(C—E)
BOB. HUM. IA
VINČA-PLOČNIK II
VINČA-PLOČNIK I
V. TORDOS II
GRADAC
V. TORDOS I
STARČEVO
MACEDONIAN E. B. A.
KPITSANA GRAPHITE ?
LATE
NEOLITHIC SEPVIA
DIMINI (IV)
GALEPSOS
,
SESKLOID WARES
—
NEA NIKOMEDEIA
?
E. TH. III
E. TH. II
E. TH. I
II
RAKHMANI
I
LARISA
DIMINI (IV)
OTZAKI (III)
ARAPI (II)
TSANGIL (I)
III
SESKLO II
I
PRESESKLO
RAINBOW
PROTO-SESKLO
EARLY CERAMIC
PRE-CERAMIC (+UNBAKED POTTERY)
LERNA E. H. III
E. H. II
LERNA IV
LERNA III
E. H. I
LERNA PRATERN
CRUSTED
BURHICH etc.
ATTIC — KEPHALA
PROSYMNA-GONIA
— ATTIKA (PAN CAVE
C. GREEK
CHAIRONEIA
LERNA II
LERNA I
RAINBOW
MONOCHROME
HALAE
N. MAKRI
NEMEA
etc.